

# Rock Products and BUILDING MATERIALS

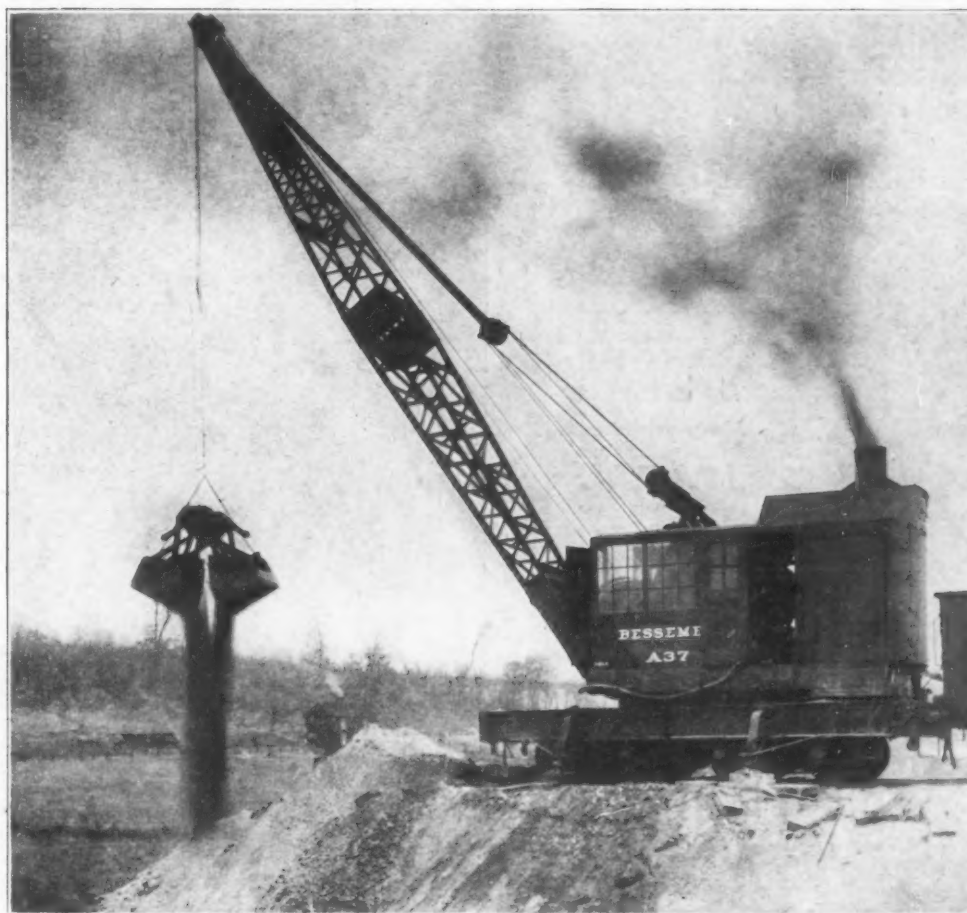
INCORPORATING DEALERS BUILDING MATERIAL RECORD

Volume XVII

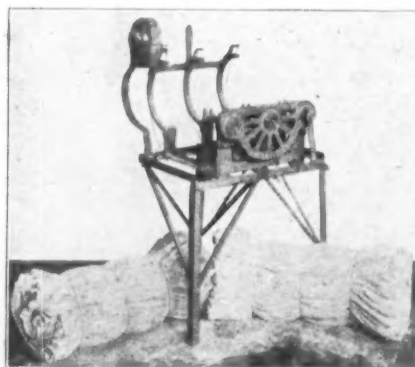
CHICAGO, ILL., JANUARY 7, 1916

Number 5

## Locomotive Cranes Solve Storage Problems



Big tonnage of cheap, loose materials brought to positive commercial control. Unlimited storage and re-handling at minimum cost has been achieved. (Page 28.)



## Bag Bundler

IT COUNTS 'EM AND  
BUNDLES 'EM

Saves Time  
Eliminates Errors

A few of our many customers say:

"It does the work of three men."  
"Will shortly order three more."  
"Would not take three times what we paid for it."  
"It is a wonderful money saver."

Write for prices

**The Faerberhill  
Manufacturing Co.**  
1392 East 40th St., CLEVELAND, O.

Agents wanted in every city. A side line for machinery and builders supply salesman.



## "PENNSYLVANIA"

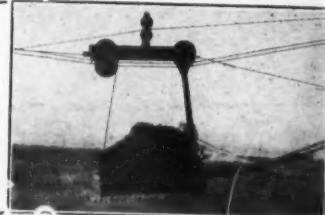
**Hammer Crushers** For Crushing and Pulverizing Lime, Limestone, Gypsum, Marl, Shale, Etc.  
Main Frame of Steel, "Ball and Socket" self aligning Bearings; forged Steel Shaft; Steel Wear Liners; Cage adjustable by hand wheel while Crusher is running.  
No other hammer Crusher has such a big Safety Factor.

**Pennsylvania Crusher Co.**  
New York PHILADELPHIA Pittsburgh

## This Is Our Type "F" Bucket

Write us your condition and requirements and we will advise you if our equipment is adapted to your work

**The Cable Excavator Co.**  
Commercial Trust Building,  
PHILADELPHIA, PENNA.



Daily Capacity  
9000 Barrels



Quality  
Quantity  
Service

## MORE THAN FIFTEEN YEARS OF SATISFACTION

FOUR PLANTS:

ALPENA, DETROIT, WYANDOTTE and CLEVELAND

## HURON and WYANDOTTE

Great Water and Rail Facilities  
Best Serve the Entire Middle West

EVERY BARREL TESTED AND GUARANTEED

SOLD BY THE BEST DEALERS

USED BY THE BEST BUILDERS

Main Offices: 1525 Ford Building, Detroit, Mich.

Daily Capacity  
9000 Barrels



Quality  
Quantity  
Service



## Beautiful Houses from Illinois to Massachusetts are Roofed with Reynolds Flexible Asphalt Shingles

A multitude of pretentious residences in a score of states are giving ample proof of the long-lasting surface of Reynolds Flexible Asphalt Shingles.

Every type of modern home can be protected and beautified at lower cost with these time-

tried, weather-tested shingles. They withstand the ravages of driving rain, pelting hail, hottest sun and heaviest snow without warping, cracking, splitting, curling or blowing off. Sparks cannot set them on fire. Long Exposure cannot dull their rich color. Adaptable to every style of pitched roof and make possible unusual architectural effects, such as roll edges, thatch effects and rounded corners.

## Reynolds Asphalt Shingles

Guaranteed for 10 years—will wear many years longer—  
Write for liberal agency proposition.

Rough-surfaced weather defiers made of crushed slate or granite securely embedded in pure Asphalt. Natural colors of garnet, red or gray green which never fade and never need painting. We are the original makers of flexible asphalt slate shingles and tested them for ten years before putting them on the market. They are uniform in size—8 ins. by 12½ ins.—and are laid 4 ins. to the weather. Easily and quickly laid.  
Let us send you a booklet showing photographs of modern houses roofed with Reynolds Asphalt Shingles. Write for a copy TODAY.

**H. M. REYNOLDS ASPHALT SHINGLE CO.**  
Original Manufacturer Grand Rapids, Mich.  
Established 1868 Members of National Builders' Supply Association

## Wheeling Wall Plaster Co.

WHEELING, W. VA.



The Building Material  
Supply House of the  
Ohio Valley

CAR LOADS AND LOCAL SHIP-  
MENTS AT WHOLESALE PRICES

Try Our Service

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

7. 1016

A"

Lime,  
s, Etc.  
Bear-  
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P.  
ES









United States Custom House and Postoffice, Omaha, Neb  
KALLOLITE PLASTER USED

## **Kallolite Cement Plaster**

Was used on the Omaha Post Office, as well as many other

**Government and Public Buildings.**

Kallolite Cement Plaster is manufactured from the Purest Gypsum Rock found in the United States as shown by last Government Report.

---

### **CARDIFF GYPSUM PLASTER CO.**

 Write for literature.

FT. DODGE, IOWA



## **About Bakup and Partition Tile—**

You ought to handle our 4x5x12 and 5x8x12 BAKUP TILE made from high-grade "Ohio" fire clay. We have a nice stock from which to make prompt shipments.

You can also get PARTITION TILE from us in sizes 3x12x12 up to 12x12x12.

One shipment from us will easily convince you that our material is what you ought to handle.

Write us for prices, etc.

**THE  
METROPOLITAN PAVING BRICK COMPANY**  
Canton, Ohio

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

# The Link-Belt Revolving Locomotive Crane

## A Reliable Machine for Handling Stone and Gravel



Standard Link-Belt Locomotive Crane, Pyott Gravel and Sand Co., Algonquin, Ill.

The Link-Belt Crane is the popular crane for handling sand, stone and gravel because it is speedy, easy to operate, and ruggedly constructed for hard service—it does a little more in actual operation than we promise you when we take your order.

We take pride in building the Link-Belt Crane—everything we put into it is the very best we know for the purpose. It's a new crane—a quality crane from start to finish—it represents the highest achievement in locomotive crane design.

Ask any gravel man who owns one—ask any crane operator. We will abide by their verdict.

### Distinctive Features:

Steel gears throughout, bronze bushings throughout, one point adjustment on clutches, few parts—every one accessible. Large, roomy platform for operator—everything handy. Exceptionally large factor of safety used; it is driven by steam or electricity, and equipped to operate Grab Bucket, Hook Block, Electric Lifting Magnet, Drag Scraper Bucket, Steam Shovel Dipper and Pile Driver.

We invite a thorough investigation—catalog and full details on request.

WRITE FOR LOCOMOTIVE CRANE BOOK No. 158

We also design and build Coal and Ashes Handling Machinery, Electric Hoists, Grab Buckets, Portable Wagon Loaders, Gondola Car Unloaders, Elevators and Conveyors for all Materials, Belt Conveyors, Bucket Carriers, Etc.

## LINK-BELT COMPANY

### PHILADELPHIA

New York.....299 Broadway  
Boston.....49 Federal St.  
Pittsburgh.....1501 Park Building  
St. Louis.....Central National Bank Bldg.  
Buffalo.....688 Ellicott Square

### CHICAGO

Wilkes-Barre.....2d Natl. Bank Bldg.  
Detroit.....732 Dime Bank Bldg.  
Cleveland.....1304 Rockefeller Bldg.  
Seattle.....540 First Ave. South  
Portland, Ore.....14th and Lovejoy Sts.

Los Angeles.....204 N. Los Angeles St.  
Denver.....Lindrooth, Shubart & Co.  
Minneapolis.....Link-Belt Supply Co.  
New Orleans, C. O. Hink, Hibernia Bank Bldg.  
Louisville.....Frederick Wehle, Starks Bldg.

### INDIANAPOLIS

Knoxville, Tenn., D. T. Blakey, Empire Bldg.  
San Francisco.....N. D. Phelps, Sheldon Bldg.  
Birmingham.....General Machinery Co.  
Brantford, Can.....Waterous Eng. Works Co.  
Toronto, Can.....Can. Link-Belt Co., Ltd.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

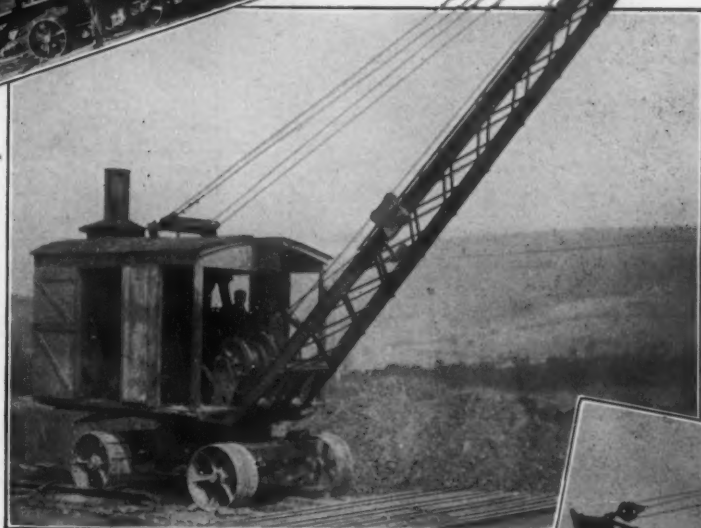
# Three Ways to Dig



with the

ERIE

# Shovel



**L**OOK at the range of work the State of Pennsylvania is getting out of its  $\frac{3}{4}$  yd. ERIE Shovel. The pictures tell the story of this crowning achievement in cost-cutting—but read these facts—

The State bought this ERIE Revolving Shovel last winter. It dug the Bellefonte Penitentiary foundation in a soil full of hard pan and heavy boulders, as the first photo shows. It cleaned up this work faster and better than the old heads around the job had ever seen.

## Then They Dug a 14 ft. Trench

They had a 14 ft. trench to dig—and the Superintendent—who knew his ERIE now—put a twenty-two foot dipper “stick” on it and got away with the work at low cost and in fast time.

Then they had us ship on an ERIE 32-foot locomotive-crane-type boom and auxiliary mechanism and back-filled the trench with their ERIE and a clam shell bucket.

**YOU NEED THIS SHOVEL** when you handle any class of excavating work. It combines all the features that go to build *larger profits—faster work—less labor—easy accessibility.*

We quote from a letter received a few days ago from Jas. W. Herron, Supt. of Construction:—

“I would add that our digging has reached the stage where we are encountering the **most severe rock conditions** and the shovel is still doing very excellent work.”

## Here Is What Wins the Owners:

When you buy an ERIE, you are buying with an eye to the future. First you have:—

The ERIE Automatic Crowding Device for that piece of shallow cutting, street grading work or quarry stripping.

AND—

The wide working range and high lift of the ERIE “Shipper Shaft” for a cellar excavation or general requirements.

When you wish—

The ERIE can be quickly converted into a very able Locomotive Crane outfit for unloading sand, gravel or crushed stone from cars.

Then—

For sewer or ditch work, just substitute a long dipper handle for a standard one.

**A HIGHLY DEVELOPED MACHINE**, no matter in what capacity you may use it, which will prove to be a **REAL INVESTMENT**. Get all the data—Write for our new Bulletin R-14, containing Facts—Figures—Photos—(mostly photos). This will interest you.

## BALL ENGINE CO.



Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



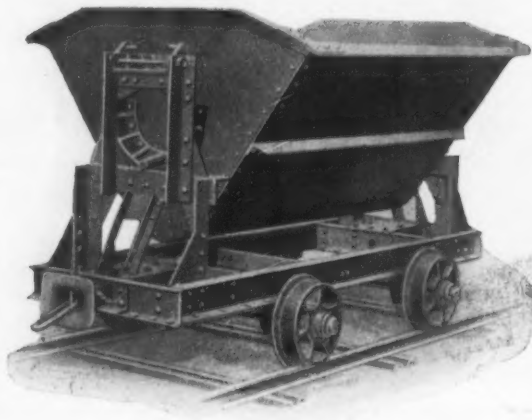
## To Economize Storage—The Lakewood Line

### The Lakewood Clam Shell Bucket

will mean economy and efficiency for you. The value of an excavating bucket depends largely upon its ability to take a large load at each grab and to open and close quickly, thus giving great working capacity. It has been repeatedly proven that the Lakewood Bucket has far greater working capacity than any other bucket, regardless of type.



## "THE LAKEWOOD LINE—BUILT TO LAST"



### Lakewood Quarry Cars

are durable, designed for efficiency, economical—are a valuable asset in the handling of any material—manufactured in all sizes and types—they are the result of 18 years of specialized effort.

The Consultation Service of our Engineering Department is ready to assist you in any problems of your operations.—Give as much information as possible regarding the conditions under which you are operating, the kind of material handled, etc. We will give you the benefit of our experience and furnish specific information as to what Lakewood Buckets and Cars are doing under conditions similar to yours.

## THE LAKEWOOD ENGINEERING CO.

### CLEVELAND

NEW YORK  
Brown & Sites Co.,  
30 Church St.

BALTIMORE  
Munsey Building

PITTSBURGH  
1230 Fulton Building

CHICAGO  
506 S. Canal St.

KANSAS CITY  
909 N. Y. Life Bldg.

#### SUCCEEDING

The Ohio Ceramic Engineering Co.

The Electric Locomotive & Car Co.

The Cleveland Car Co.

The Pittsburgh Dryer Co.

The Industrial Car Co.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

# The C. R. S. LOCOMOTIVE CRANE



will increase your storage facilities and decrease your handling costs.

Our Engineering Department is prepared to offer suggestions to help you solve your problems. Why not write us for further information as to how we can

*Increase Your Profits*

**THE CLEVELAND RAILWAY SUPPLY CO.**  
CLEVELAND, OHIO

## How Was This Material Handled?

79,281,735 tons of sand and gravel produced and sold in 1914—49,364,476 tons of crushed stone produced and sold in 1914—

—from report of Dept. of Interior

A large amount of this material was handled and stored by inefficient methods.

The manufacturers of economical handling equipment—of cranes, buckets, elevators, etc., should take advantage of this great producing field and tell their story of **economy** to these quarrymen.

ROCK PRODUCTS AND BUILDING MATERIALS is the official paper of the quarrymen of the United States—Its advertising pages cover the complete "buying power" of this great industry.

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**How Much of the Above 130 Million Tons Did Your Equipment Handle?**  
**How Much Do You Wish to Handle in 1916?**

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



Sand Handling Gantry Crane equipped with a man trolley, 4-line, two yard Clam Shell Bucket, and rigidly attached hopper to guide the material into the storage reservoirs.

## You Can Reduce Your Handling Costs

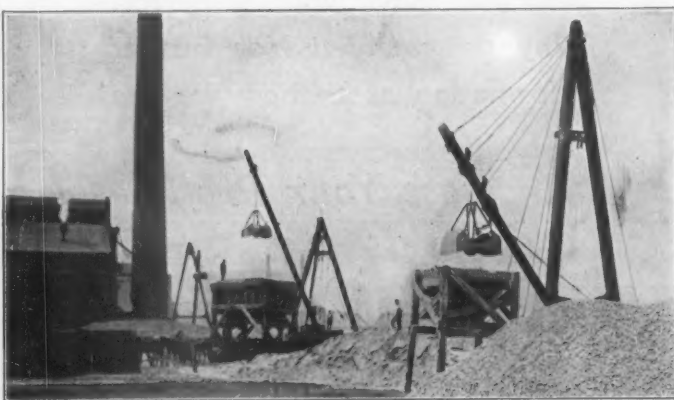
by the use of proper equipment for your work, which should easily and economically handle the material it was designed to take care of. That is why the Edward Ford Plate Glass Company, of Toledo, O., chose a

### "McMyler Interstate Gantry Crane"

to take care of unloading sand from cars to stock pile, and then to the mill, as same is needed.

**The McMyler Interstate Co. Dept. P-3 Cleveland, Ohio**  
**New York London Chicago**

PRODUCTS—Locomotive Cranes, All Type Buckets for every purpose—Elevating and Conveying Machinery, etc.



## Haiss Clam Shell Buckets

*Digging Trap Rock,  
Sand and Gravel*

For work of this character, calling for buckets of exceptional strength and digging power, you will find Haiss buckets are universally used.

*Catalogue No. 614 describes and illustrates  
Haiss High-Power digging buckets.*

*Catalogue No. 1014 for Haiss rehandling buckets.*

**WRITE US NOW**

**GEORGE HAISS MFG. COMPANY, Inc.**  
 146th Street and Rider Avenue New York City

## LOCOMOTIVE CRANES TO ECONOMIZE STORAGE



Reasons why the Ohio Locomotive Crane is economical:

90 per cent of the CASTINGS are Basic Open Hearth Steel.

All steel gears with machine cut teeth.

Bronze interchangeable shell bearings.

Greater speed—longer life—uninterrupted service.

We make a profit on each crane sold. We do not rely upon crane repair parts for our profits. Our books are open to convince you of this.

**Get Our Latest Catalogue No. 11**

## THE OHIO LOCOMOTIVE CRANE CO., Poplar St., Bucyrus, Ohio

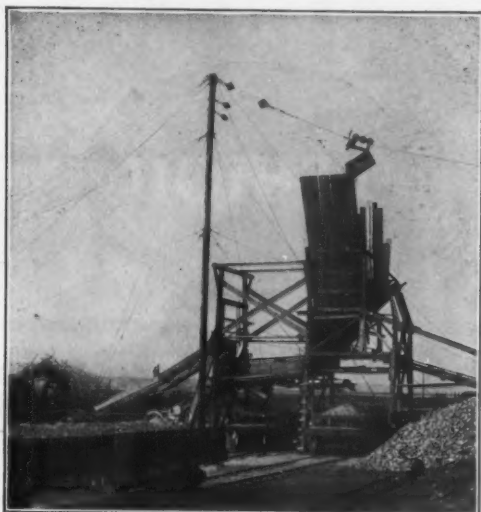
30 Church St. . . . . NEW YORK  
 Fisher Bldg. . . . . CHICAGO  
 Home Life Bldg. . . . . WASHINGTON, D. C.

Oliver Bldg. . . . . PITTSBURGH  
 Edward R. Bacon Co. . . . . SAN FRANCISCO  
 Contractors Equipment Co. . . . . Seattle, Portland

N. C. Walpole. . . . . BIRMINGHAM, ALA.  
 950 Rockefeller Bldg. . . . . CLEVELAND, O.  
 Kelly, Powell, Ltd. . . . . WINNIPEG, MONTREAL

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS





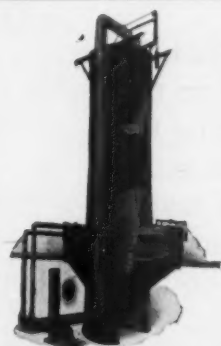
## Economy and Efficiency

This excavator is not only adapted to discharge the load at the power end but also at the ANCHOR END of the cableway.

In this operation the delivery is accomplished by gravity, no power being required for transmission.

These are but part of the features of the Negley Excavator—we will be pleased to give you complete information.

**INDIANAPOLIS CABLE EXCAVATOR CO.**  
216-18 Massachusetts Ave., Indianapolis, Ind.



## Doherty-Eldred Lime Kilns

Complete Lime  
Burning Plants

*Refractory Material  
for Linings*

**The Improved Equipment Co.**  
Combustion Engineers 60 Wall St., New York City

## Protect Your Walls—Marvel Window Chutes

protect against coal haulers and burglars. See the wings! What's the use of a pouch, anyway? Safety first. Marvels lock automatically. Heavy and indestructible.

Mr. Material Man: If you are early enough you can have the exclusive agency in your city, and our prices are right. And the individuality of the Marvel Chute makes it easy to sell.

### DIMENSIONS AND PRICES

Chutes with Solid Iron Doors  
NOTE—Marvel Junior has no wings. All others have swinging wings. Marvel Junior Marvel Junior Marvel  
No. 400 No. 413 No. 513 No. 613

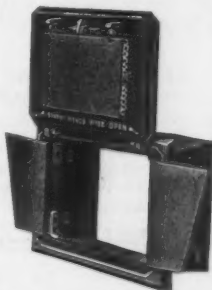
Wall opening.....	17x24	17x24	17x30	22x24
Depth of body.....	9 in.	12 in.	12 in.	18 in.
Shipping weight.....	55	95	100	150
Price .....	\$5.00	\$7.50	\$8.50	\$12.00

Chutes with Wire Reinforced Glass in Door  
Marvel Junior Marvel Junior Marvel Junior  
No. 100 No. 113 No. 213 No. 313

Shipping weight.....	60	110	125	150
Price .....	\$6.00	\$9.00	\$10.00	\$13.50

Chain opening attachment no extra charge.  
Ask for Leaflet "R."

**Interstate Mfg. Co., Oskaloosa, Iowa**



# 4 operations at Once—

DIGGING  
SCREENING  
LOADING  
SWITCHING



## The New BROWNING LOCOMOTIVE CRANE

is just one more advantage of the times. Using the new Browning for handling materials means giving birth to a new kind of PROFIT—a profit that was not known under the old ways of handling. The new control is the most simplified known. This means more accuracy—a saving of minutes. The machine's graceful lightness, whether in its boom action or in its self-propelling from place to place, comes from our new, exclusive ideas of design and construction. Let us mail you our set of folders showing the Browning on all sorts of work. These are free.

Write

**The Browning Company**  
Cleveland, Ohio

SALES OFFICES:

New York Philadelphia Chicago San Francisco

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

# 1916 WILL BE A "Tiger Brand" Year

"More and better buildings" is the prediction for 1916.

That means more sales and bigger profits for dealers who handle



(Hydrated Lime)

## Tiger Brand White Rock Finish (Hydrated Lime)

The architects who design these buildings and the contractors who build them know Tiger Brand better every year and every year more of them insist on having it.

Your sales will increase next year if you handle this material.

**THE KELLEY ISLAND LIME & TRANSPORT CO.**  
CLEVELAND, O.

## ? ARE YOU A LIME, CEMENT, STONE, ? OR SAND AND GRAVEL PRODUCER ?

**Our Service is for You** We are Engineers—Designers of Sand and Gravel Washing Plants—Manufacturers of Dull's Tubular Washer, Cableway Excavators, Screens, Conveying Equipment, Pulleys, etc. See our full page advertisements in the previous and next issue of ROCK PRODUCTS AND BUILDING MATERIALS, or write today to our Chicago office.

**The Raymond W. Dull Company, 1912 Conway Bldg., Chicago, Ill.**



Duplex Bin Gates

**WELLER-MADE**

**DELIVERY GATES**  
Undercut Overcut Duplex  
Plain or Special

**SCREENS :: ELEVATORS**  
Everything for handling Sand, Gravel and Crushed Stone

**Weller Mfg. Co., Chicago**



Undercut Bin Gates

The first Portland cement manufactured in America  
**1866** **PORTLAND** **1915**  
**SAYLOR'S**  
**CEMENT**

**COPLAY CEMENT MANUFACTURING CO.**

Mill, Coplay, Lehigh Valley, Penna.  
PHILADELPHIA NEW YORK BOSTON JACKSONVILLE, FLA.

*"Concrete for Permanence"*



## A Year of Concrete

With the impetus of the past season—

With the buying power of a successful farm and manufacturing year—

With the lesson of the great conflagrations and other disasters of 1915—

This year will be a year of concrete construction.

We are preparing to help our dealers cash in on the consequent big demand for cement. You wish to build a profitable cement trade. Will you let us show you what Lehigh can do for you this season?

# LEHIGH CEMENT

CONCRETE FOR PERMANENCE

MILLS:

Ormrod, Pa.; West Coplay, Pa.; Foglesville, Pa.; New Castle, Pa.; Mitchell, Ind.; Mason City, Ia.; Metaline Falls, Wash.

OFFICES:

Allentown, Chicago, Spokane, New York City, Philadelphia, Boston, Minneapolis, Savannah, Des Moines, New Castle, Buffalo, Pittsburgh.

**12 Mills—Annual Capacity Over 12,000,000 Barrels**

See the Cement Manufacturers' Exhibit at the Cement Show, Chicago, Feb. 12-19

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



# Rock Products and BUILDING MATERIALS

INCORPORATING DEALERS BUILDING MATERIAL RECORD

Volume XVII

CHICAGO, JANUARY 7, 1916.

Number 5

## PUBLISHED SEMI-MONTHLY.

DEVOTED TO

Quarry Products, Cement, Lime, Plaster, Sand and Gravel, Clay Products and Building Specialties—Fireproof Building and Road Construction.

## THE FRANCIS PUBLISHING COMPANY.

EDGAR H. DEFEBAGH, Prest.

Seventh Floor, Ellsworth Bldg., 537 So. Dearborn St., Chicago, Ill., U. S. A.  
Telephone: Harrison 8086, 8087 and 8088.

### EDITORS:

EDGAR H. DEFEBAGH. FRED K. IRVINE.

GEORGE A. OLSEN, Editor Retailers' Section.

H. F. AKE, Secretary.

DRUSUS H. NICHOLS, Advertising Manager.

Communications on subjects of interest to any branch of the industry are solicited and will be paid for if available.

Every reader is invited to make the office of Rock Products and Building Materials his headquarters while in Chicago.

Editorial and advertising copy should reach this office at least five days preceding publication date.

### TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions.....\$1.00

In all other Countries in the Postal Union.....\$1.50

Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.

Advertising rates furnished on application.

Published on the 7th and 22nd of each month.

Entered as second-class matter July 2nd, 1907, at the Postoffice at Chicago, Illinois,

under act of March 3rd, 1879.

Copyright, 1915, by E. H. Defebagh.

The new year begins with the banner of prosperity flying in the breeze.

The mileage of road work for the season of 1916, now settled, and for the most part contracted, exceeds all records.

Cheap money markets are considered as the best promise of the materialization of building projects, great and small, in increased numbers.

Transportation, the principal item of profit which the dealer has to sell, has been revolutionized by the improvements of the auto-truck, and their more general use is one of the features of the supply business of the country.

When an overworked powder mill blows up or a perfectly natural accident occurs in a munition factory where organized labor is working twenty hours out of twenty-four, the police at once suspect a plot. There are other plots that get through without ever being suspected.

Chicago and Cleveland are to be the centers of interest about the middle of February for the convocation of the building material interests. Dealers, contractors and engineers will meet to absorb enthusiasm to carry them into the activities of the coming season. The promise of big prosperity was never brighter.

The opinion prevails that a great deal more cement can be used advantageously in properly completing the Panama Canal. It will take considerable time to make the necessary repairs. It does look as if Providence has intervened to keep us out of trouble, for with the war trouble concentrating around the Suez route, if our new canal was in commission we might have to fight to keep it.

Building material dealers in the smaller towns are finding that a stock of such specialties as expanded metal lath, corner bead and concrete reinforcing material is making them money. Such rust as is accumulated on the surface of these specialties when stored in a good warehouse is not objectionable to the user, nor does it detract from the value of the goods. In fact, when such metal is new and bright it will not bond with plastering material so well as it will when completely covered with a coating of rust.

The development of a merchant marine depends upon both buying and selling. Even though the trade commissions could find foreign countries that would buy our products, unless there is a return cargo for every vessel, there could be no possible traffic. We have seen a great many suggestions about enlarged sales campaigns to foreign countries, but altogether too little about the importation of the products of the countries that we expect to sell to. In the matter of South America their staples of coffee, sugar, and spices carry the suggestion of increasing the importation of those products, but when it comes to wheat, meat, and other foodstuffs, which are our own heavy exports, it is certain that the old trade routes to Europe will be attractive, because these products will purchase in European markets many of the very commodities that we have to sell to our principal competitors in South America and elsewhere, who produce food products the same as our own. While heartily endorsing every attempt to extend our merchant marine, we realize that full reciprocity in trade is essential, and call attention to the fact that whirlwind selling campaigns cannot be crowned with profitable success unless reciprocity is practiced in its broadest sense.

A feeling of co-operation and friendly business rivalry is in the air. The beginning of 1916 finds the building material industries, and every branch of the trade connected therewith, in better condition than has ever been known. Better balanced, better prepared and equipped to meet the activities of the coming season. Financiers everywhere speak in no unmeasured terms of the confidence that they feel in industrial and commercial enterprises. In spite of the heavy liquidation of American securities from abroad we have found no difficulty in absorbing the burden, and are really all the better off since this kind of securities have brought us so much nearer to being a self contained people. As a nation we are not far from being out of debt, and accumulating resources makes it altogether possible for our financiers to reach out after markets beyond our borders. No such condition ever existed before in our history. In building material lines especially there is a poise which promises to cut out the feature of over-anxiety to get things started in the spring. It has been recorded for several years that the last half of the active season has redeemed the average of the year, and it is conversely recognized that the low prices and uncertainties of early spring have always been the bad feature that took three months more to overcome. A new regime has been inaugurated to eliminate this needless sacrifice of energy and profit, and by conserving the first half with one sweep secure a higher average market for the entire year, to the distinct upbuilding and assistance of all parties concerned. In this preliminary period of inactivity it is better to take matters philosophically, cover the entire field efficiently with advertising matter of every kind and devote the time of waiting into a period of planting the seed for future business to be reaped sooner or later by convincing future investors of the permanent safety of fire-proof construction.



# WITH YOU and ME

H. E. Hiltz, Pacific Coast representative of the Association of Portland Cement Manufacturers, has just arrived in San Francisco after a tour of the Coast states.

T. L. Hughes has been appointed district sales manager of the Lehigh Portland Cement Co., with offices at New Castle, Pa., in place of P. A. Jandernal, who has resigned.

Louis McAdoo, of the McAdoo Concrete Co., Union City, Tenn., and Miss Hattie Clements, of Rives, Tenn., were married during the holidays. They will reside in Union City.

Columbia University, New York City, has listed a series of seven illustrated lectures on highway engineering to be given in the Institute of Arts and Sciences during the month of January.

S. A. Thompson, who is traveling through the length and breadth of this country selling "Clyde" hydrators, paid a visit to the office of ROCK PRODUCTS AND BUILDING MATERIALS while in Chicago just before Christmas.

A Dallas, Tex., office has been opened by H. W. Caldwell & Sons Co., at 1011 Main St., that city, for the purpose of giving better service to customers in that locality. J. C. van Arsdell is in charge of the new office which was opened Jan. 1.

P. G. Kemp, who represents J. B. Speed & Co., Louisville, Ky., was one of the traveling men who welcomed the new year away from home. He ushered 1916 into the mysteries of the next 12 months mid the din and roar of the celebration in Chicago.

Frank H. Holland, eastern sales manager of the Best Bros. Keene's Cement Co., with offices in the Forty-second Street building, New York City, was laid up with an attack of the grip during the holiday season. He is back at the office and reports business very brisk in the east.

The office of ROCK PRODUCTS AND BUILDING MATERIALS had a pleasant call from H. C. Shields, Chicago representative of the Lehigh Car Wheel & Axle Works, last week, and he reports that his company is going full force filling the increasing demand for Lehigh and Fuller pulverizers.

H. A. Johann, of St. Louis, Mo., who ought to have been christened "Manganese Steel Castings" is still on the job with steel plates that are harder than ever and "Joe" is one of the scouts who know the whole route and how to take care of every specification, no matter how hard it is.

A. G. Whitney, who will have charge of sales for the Iola Portland Cement Co. in Nebraska, Iowa and the Dakotas as northern sales agent, will open an office at 425 Rose building, Omaha, Neb., on Jan. 20. Mr. Whitney has been located in Wichita for the last six years and has had charge of sales in Southern Kansas and Oklahoma.

An interesting visitor appeared at the offices of ROCK PRODUCTS AND BUILDING MATERIALS during the holiday season in the person of George S.

Earnshaw of the Atlas Crushed Stone Co., Gallatin, Mo. Mr. Earnshaw reported a good demand for crushed stone for use as ballast and for construction purposes, but stated that he had great difficulty in securing help to man his operations.

The Sacramento, Cal., Builders' Exchange, which effected provisional organization in November, held a meeting Dec. 21, at which considerable progress was made. The membership committee was named as follows: W. Keating, chairman; C. Guth, R. Rowe, I. C. Ross, E. Hite, W. Scoville, C. V. Schneider, T. Enright, P. J. O'Brien, E. S. Warner and B. Scollan. Nominations were made for the

executive committee, to consist of eleven members, and the final choice will be made at a meeting Jan. 11.

The general offices of the American Enamel Brick & Tile Co. have been moved to the Vanderbilt Concourse building, 52 Vanderbilt avenue, New York City. Announcement is also made that the recently organized Hay, Walker Brick Co. is now the selling agent in the Metropolitan district. Andrew A. Ayers and William G. Black, formerly of Carter, Black & Ayers have been associated with the Hay, Walker Brick Co.

The clerks and heads of the various departments of the Coplay Cement Manufacturing Co. took advantage of the recent snowfall and traveled to the famous Laury hotel, Laury's Station, Pa., in sleighs in order to partake of one of their famous chicken and waffle dinners. Following the banquet George E. Newhard, acting as toastmaster, called upon G. A. Christ and L. Stokes, who spoke along the lines of efficiency regarding employees. W. G. Weidner favored with several vocal selections. Following a general business session, social affairs were discussed and the entire party returned to Coplay at a very late hour. Those in the party were G. A. Christ, C. P. Benner, Walter E. Miller, W. G. Weidner, George Gehringer, A. J. Andrews, C. Johnson, Walter Mohry, Lewis Miller, James J. Anthony, C. Heckman, G. E. Newhard, W. Johnson, Leon Stokes, Robert Shaffer, W. R. Litzenger, J. W. Hahn, C. Gogle, H. Reinert and Thomas Lille.

The public spirit displayed by the three Jahneke brothers of New Orleans, Ernest Lee, Walter F. and Paul F., shortly after the terrific September hurricane that ravaged the Gulf Coast section, as recounted in a recent issue of ROCK PRODUCTS AND BUILDING MATERIALS, received recognition from New Orleans citizens in the shape of presentations to each of the three brothers of handsome testimonials on Christmas day. A set of ramekins and saucers was given Commodore Ernest Lee Jahneke, a silver coffee set to Walter F. Jahneke and a silver cocktail set to Paul F. Jahneke. A considerable sum of money was divided among the crews of the yachts Claribel and Glendiveer as a token of appreciation for the noble work of rescue in which they assisted. After the storm of Sept. 29, which did property damage on the Gulf Coast to the tune of \$8,000,000 and took 200 lives, telegraph and railroad communication was cut off between New Orleans and points on the Gulf Coast, and many Orleanians were distressed by their failure to hear from relatives and friends. The big-hearted Jahnekes at once put their two yachts into service, organized a relief expedition and hurried to the scene of trouble. They distributed provisions to many who had been impoverished by the destruction of their homes and took a great number of stranded men, women and children aboard for safe conduct back to the Crescent City. A few days after John M. Parker, progressive candidate for governor of Louisiana, suggested that a fund be raised with which to purchase testimonials for the Jahnekes. The fund was raised, with quite a number of prominent Orleanians subscribing, and the three building material men thus were remembered on Christmas day.

## Scheduled Shows and Meetings.

Jan. 12-13, 1916.—Indiana Crushed Stone Association, Claypool Hotel, Indianapolis, Ind.

Jan. 18-20, 1916.—Canadian National Clay Products Association, annual convention, King Edward hotel, Toronto, Ont., Can.

Jan. 19, 1916.—Inter-State Stone Manufacturers' Association, Virginia Hotel, Columbus, Ohio.

Jan. 19-21, 1916.—Nebraska Lumber Dealers' Association, Lincoln Hotel, Lincoln, Neb.

Feb. 2-3, 1916.—National Lime Manufacturers' Association, annual meeting, Cleveland, Ohio.

Feb. 3-4.—Iowa State Clay Products Manufacturers' Association, annual meeting, Iowa State College, Ames, Iowa.

Feb. 8-9, 1916.—Chamber of Commerce of the United States, annual meeting, Washington, D. C.

Feb. 8-10.—Illinois Clay Products Association, annual meeting, Hotel Jefferson, Peoria, Ill.

Feb. 12-19, 1916.—Ninth Chicago Cement Show, Coliseum and Armory, Chicago, Ill.

Feb. 14-17, 1916.—American Concrete Institute, annual convention, Auditorium hotel, Chicago.

Feb. 15-16, 1916.—Ohio Builders' Supply Association, annual convention, Cleveland, Ohio.

Feb. 15-17, 1916.—Illinois Lumber and Builders' Supply Dealers' Association, annual meeting, Sherman hotel, Chicago.

Feb. 15-18, 1916.—Second National Conference on Concrete Road Building, Auditorium hotel, Chicago, Ill.

Feb. 16-26, 1916.—Complete Building Show, Coliseum, Cleveland, Ohio.

Feb. 17-19, 1916.—National Builders' Supply Association, annual convention, Statler hotel, Cleveland, Ohio.

Feb. 18-19, 1916.—West Virginia Lumber and Builders' Supply Association, Wheeling, W. Va.

Feb. 20-26, 1916.—National Brick Manufacturers' Association, annual convention, Statler Hotel, Cleveland, Ohio.

Feb. 24, 1916.—New England Builders' Supply Association, New American House, Boston, Mass.

Feb. 29-March 4, 1916.—Tenth Annual Midwest Cement Show, Omaha, Neb.

March 22-23, 1916.—New York State Builders' Supply Association, Onondaga Hotel, Syracuse, N. Y.

JANUARY 7, 1916.

F. P. Jones, general manager of the Canada Cement Co., has consented to be elected a director of the Dominion Iron and Steel Corporation. It is also stated that he will probably succeed Sir William Van Horne as vice-president of the corporation.

### Tonnage or Profit?

What does the New Year guarantee?  
What does the future hold in store?  
Shall "Profit First" the slogan be,  
Rather than "Manufacture More?"

Today we see a future fair:  
What folly such a sight to spurn!  
The dawn of plenty, what so rare,  
Confronts us wheresoe'er we turn.

When were conditions such as now?  
Can any man point out the time  
When no one had a clouded brow,  
And none suspected any crime?

No longer is it our proud boast,  
A swelling output to expand:  
We drink to him in hearty toast,  
Who fits production to demand.

The country's need is smaller far  
Then we are able to supply:  
Instead of rushing into war,  
"Increased demand" should be our cry.

Who holds our fate in hollowed hand?  
Who rules our destiny today?  
What man is there thruout the land,  
On whom this burden we can lay?

Nor east nor west you find the man,  
Nor yet in Canada's far shore;  
The Southland carefully you scan,  
Thruout our history you pore.

You search the land from end to end,  
And Echo hears your anxious cry.  
Look not abroad for him, my friend!  
You are responsible, and I.

—Robert F. Hall.

### Better Business Conditions for 1916.

Washington, D. C., Jan. 2.—That the outlook for better business for the first four months of 1916 is in striking contrast to that prevailing this time last year is the opinion expressed in a report just submitted by the Committee on Statistics and Standards of the Chamber of Commerce of the United States. There are localities where much caution and conservatism yet remain, and the influence of high prices for the future further accentuates this caution because dealers feel that high prices will curtail buying by the consumer. Broadly speaking, the report goes on, it may be said that the spirit of optimism and hopefulness prevails to a degree that has not been apparent for nearly a decade and the general belief and expectation is for such prosperity during 1916 as will recompense the people of this country for all their past misfortunes.

Referring specifically to conditions caused by the European war, the report of this committee, of which A. W. Douglas, of St. Louis, is chairman, says:

"The adverse effect of the conflict in Europe still prevails in some sections though to a very much less extent than at this time last year. There are still scattered fears of the possibility of this country being involved in the gigantic strife; but as against this the large portion of the people are paying less and less attention to the war and more

are concentrating their thought and efforts on and more are concentrating their thoughts and efforts on domestic matters."

Railroads report better business as a whole and railroad shops are employing more and more men. Manufacturing has taken on new life through the whole country and in almost every branch. Abnormal activities prevail largely in the East and in certain portions of the central West because of heavy orders from abroad for war purposes. This has created a temporary lack of raw material in many lines not otherwise affected by war orders. There is much consequent decrease in unemployment. Prices are being advanced everywhere by manufacturers in all lines and they are continually being flooded with orders. Automobile factories and flour mills are exceedingly busy. This is likewise true of potteries, cement factories and furniture.

While money is plentiful and rates generally are not high, there is a wide difference in the ease or lack of ease with which it can be obtained, and this difference seems to be largely due to local conditions. As a whole, however, it is not difficult to get money from the banks on good collateral for legitimate purposes. Collections vary from poor to good and as a rule average fair.

Merchandise stocks in the hands of the retailers vary from light to normal—the percentage being, by a small proportion, in favor of normal. Orders for future shipments in the spring are being more generally placed than for some years past, thus showing the confidence of the dealers in the immediate future.

#### Excellent Crop Reports.

The crop yields in general, other than cotton, exceed those of any year known in our history. This is especially true of the small grains as a whole, and particularly of all of the forage crops which are in abundance beyond precedent.

It seems now well settled that the cotton crop will be one of the smallest for several years, but it is being sold at very remunerative prices, for it was one of the cheapest cotton crops ever raised

because of economies of every kind and description enforced by necessity upon the farmers and planters. It is practically all picked, and a very large portion of it is sold and the results of it are seen in the improved conditions in the cotton belt between now and twelve months ago.

There is more live stock in the country at this time than for the same time last year, despite the unfavorable conditions reported in certain sections in the northwest. The dairy industry continues to grow and expand in all sections of the country. Much the same is true of poultry products. Mining in all forms shows marked improvement of conditions prevailing a year ago.

The tobacco crop yields about the same as last year. Sugar beets have not only a larger yield than last year but command higher figures. The production of fruit throughout the country was very large, but much of it was at unremunerative prices. The present outlook for California and the southern states for early garden truck is fairly up to the average. Reports from the South and middle Atlantic states fisheries are of slow business, while in New England, on the contrary the situation is most excellent.

The lumber business of the United States which has seemed dead for several years, according to the National Chamber report appears only to have been sleeping. It is improving slowly throughout the entire country but especially in the yellow-pine district of the South. This is due to increased orders for exports and to buying by railroads and car companies.

It is expected that during the spring there will set in buying for homes, and a general revival of building throughout the country, especially outside of the large cities, is looked for during the first six months of the coming year. Of all the so-called barometers of business, according to the authority quoted above, there is none so truly indicative of general prosperity as building. It is usually the last industry to feel the impulse of better times, but its activities embrace so many lines of business that this effect is general throughout the country.



THE MODERN SYSTEMATIC SALES STRATEGY DEPENDS UPON PERFECT ORGANIZATION AND PROMPT AND EFFICIENT EFFORT.



# The RETAILER

## Del-Mar-Col Meeting Best in Its History

When President B. L. Grove called the quarterly meeting of the Del-Mar-Col Building Material Dealers' Association of Dec. 8 to order at the Continental hotel, Washington, D. C., he was greeted by the largest attendance of active members that had ever been present at a meeting of the association, showing the growing interest being taken by dealers in the value of the work of the association. President Grove in opening the session enthusiastically expressed his appreciation of the large attendance and in doing so referred particularly to the effect of the membership committee's splendid work in arousing interest among dealers who had heretofore taken very little interest in the association's work.

Secretary-Treasurer J. Grason Steffey read the minutes of the meeting of the association held at Atlantic City in August and reported a healthy condition of the treasury. The applications for active membership of S. Rinehart Cohill, Hancock, Md., and the Suburban Lumber Co., Baltimore, Md., and for associate membership of Samuel H. French & Co., Philadelphia, Pa., were favorably acted upon by the association. General discussion followed on the definition of a dealer, along lines that would furnish the bona-fide dealer the protection that he should have from the manufacturer in operating a well-equipped establishment for a prompt and efficient service to the trade. Very helpful papers on the present business situation were read from John Poole, president of the Federal National Bank of Washington, and by Edwin C. Graham, vice-president of the Builders' and Manufacturers' Exchange of the city of Washington. The meeting adjourned with the greatest success in accomplishing more real benefits than have ever been derived at any of the association's previous business gatherings.

Under reports of officers President Grove submitted the following:

### Report of President B. L. Grove.

Presenting to you this, my fifth quarterly report as president of your association, I feel that possibly a large number of our membership do not realize the vast importance an association of this character is to the dealer in building materials; the great good that can be accomplished and vast benefits derived by a close relationship, and the manifestation of good fellowship existing between dealers.

I personally feel that our association has in its short period of existence accomplished much towards bettering the building material dealers' conditions. True, there is a large scope of work yet to be done, though when we analyze present conditions as compared to conditions generally a year or more since, I think we have a right to be thankful and proud of our achievements. Mentioning briefly a few of the things we have accomplished:

First, the combining and coöperation of the eastern dealers' associations which have made it possible for us to be recognized and to treat with the manufacturers of the products which we handle, thereby receiving recognition by these companies and firms. This could never have been done had we acted individually; but collectively it makes it possible to be recognized.

Our gatherings have benefited us by bringing us in contact with our brother dealers from all sections; through the thought and exchange of ideas and views as to the conduct of the building material business much has been and can be learned which is of profit.

Things that are being accomplished in distant parts, when spoken of by those far removed, have much more weight and will be acted upon more quickly than all the arguments that could be used by a local man, trying to convince his neighbor that certain things could be accomplished if once tried.

Again, through the medium of our association, a closer alliance is formed with the manufacturers. We come to

know each other better; we can discuss freely business conditions which can be turned to mutual advantage.

In my judgment, one of the greatest benefits we have derived by reason of our organization is the kindly spirit manifested among the dealers locally. From a general observation we believe there exists in every town reached by our association membership a far more kindly feeling and friendly spirit between the dealers locally; as an example, my home town, Washington, I can say that for twenty years a spirit of antagonism, distrust and bitterness has existed to a marked degree to the disadvantage of all, retarding each dealer in building material from the progress and advancement of business interest to which he is justly entitled, allowing personal feelings to stand in the way of profit-making. I am happy to say, gentlemen, these conditions do not exist here now. We are placing trust in each other and I firmly believe we shall continue onward hand in hand as one happy family to that great goal, "Success."

Passing on advantages derived from our association, this one instance mentioned is sufficient to recompense all for the slight cost and time given to association work.

Since our last meeting an arrangement has been perfected with the plaster manufacturers along the same lines as those now existing with the cement manufacturers. This problem has been in the course of adjustment as you have known for some time and we believe is now working perfectly satisfactory.

The coöperation of manufacturer and dealer was well exemplified Oct. 29 when the manufacturers of plaster shipping into Washington and the adjacent territory met in joint session with the dealers in that section to adjust some local complications. This meeting in itself was harmonious and accomplished the purpose for which it was called. If this procedure was followed wherever trade trouble is liable to arise, how quickly and perfectly differences could be adjusted.

Your executive committee held a conference in Baltimore Oct. 27 for the purpose of transacting such business as came before the meeting.

Our last quarterly meeting held at Atlantic City, from a business point of view, I may say was not a howling success. It was not expected; therefore not a disappointment. Socially, I may say it was one great grand success. Judging from action and antics, I feel everyone enjoyed himself immensely; there are no regrets that our mid-summer meeting was held at "America's Greatest Playground."

The action of the cement manufacturers in granting a five-cents-per-barrel discount on cement is pleasing. I hope each of our dealers will take advantage of this discount and not take it into consideration when quoting, thereby availing ourselves of this opportunity to which we are justly entitled, a slight remuneration for our labor. Let us not be so foolish as to give away, without reimbursement, our working capital.

One matter I wish particularly to call to your attention. I may be optimistic in my views. I hope we all are optimists, for they make the world progress—pessimists retard its growth. We firmly believe the year 1916 will be one of the greatest for business activity of our day. Conditions arising from the great European war have made an unprecedented demand for the products of this country. This condition has created an extraordinary demand for the things necessary to the manufacturer, fuel and labor. In my opinion the worst has not been reached. I firmly believe before a twelve-month has passed the energy of we dealers will not be directed towards trying to sell goods regardless of profit, as has been the case in the past; on the contrary, it will be devoted towards securing goods to deliver, getting transportation and labor to handle same. Why should we not then follow in the footsteps of the manufacturers and receive for our goods prices commensurate with existing conditions?

Two matters I wish to treat briefly:

First: Securing members. You all know the importance and necessity of having a large strong organization.

Second: The payment of dues. Our wants are not extravagant; you realize, though, the necessity of using some money for the proper handling of association work. Our treasurer is always in a receptive mood; back dues will be acknowledged by him with a pleasing smile.

A report of the meeting of the executive committee of the association, held at Baltimore, Md., Oct. 27, was read by Secretary Steffey, as follows:

At the executive committee meeting of the Del-Mar-Col Building Material Dealers' Association, Baltimore, Md., Oct. 27, President Grove stated that he had called the meeting for the purpose of presenting certain matters of importance to the Del-Mar-Col Association for consideration and decision and instruction to him on the

eve of his attendance at the meeting of eastern association plaster quotations was presented, and it was agreed that an effort be made to have the differential of fifty tons in New York City. The matter of a differential cents a ton prevail between dealers and consumers.

### Definition of a Dealer.

The definition of a "dealer," or what shall constitute a bona fide dealer, was next discussed, and the following was decided upon by the meeting: "Active membership shall be open to any individual, firm or corporation regularly engaged in the masons' material business in the state or district or territory, as the case may be, who operates a yard sufficiently equipped with storage facilities in which to receive and store and from which stock is delivered to consumers in less than carload lots. No individual, firm or corporation shall be considered a masons' material dealer who does not carry in stock, and in quantities reasonably commensurate with the demands of the community in which he operates, at least sixty per cent of the following named products: cement, sand, broken stone or gravel, brick, lime, flues or sewer pipe, lath, plaster board, hard wall plaster and plaster of Paris. In the event of such individual firm or corporation being also in the business of building and general contracting, he shall be eligible to active membership, if the above conditions are complied with.

The above was adopted with the following amendment: "Be it further provided that in all towns of 10,000 or more (last census) this definition shall only apply to such dealers that purchase four or more of the above enumerated articles in carload lots."

Under the subject of the executive committee's report, dealing with the definition of a dealer, opinions of the membership were sought by President Grove, who felt that this was a very important trade matter and should be adjusted in a lawful and satisfactory manner to both producer and dealer. Walter L. Dutton, sales manager of the Coplay Cement Co., thought it was a practical impossibility to adopt a hard and fast rule as to whom was to be considered a dealer, whereupon President Grove explained that he hoped the association could decide the question so that he would be able to rule on the numerous inquiries that were being put up to him. Edward R. Pusey, of the E. R. Pusey Co., Wilmington, Del., said that this question of a dealer's status had come up with the coal dealers and said that a coal dealer having his own siding and own yard was considered a dealer. Mr. Pusey stated that he did not see how a decision could be reached by endeavoring to determine who constituted a dealer by the volume of products he sold. Oscar L. Johnson, of Rockville, Md., took the view that if a dealer keeps a stock of goods commensurate with the conditions and the size of the community he serves, he is justly entitled to be recognized in the trade as a dealer. President Grove aimed to make it plain that the purpose of the deliberation over the question of the dealer's status was to define the difference between a so-called jobber and a legitimate dealer. Mr. Dutton thought it advisable to have a committee to whom could be referred all cases to determine who is the dealer, the contractor or the jobber. He stated that he believed that the building material manufacturers were ready to receive recommendations from the builders' supply associations and to coöperate with them on this dealer problem. A number of specific conditions relating to the discussion of the dealer's recognition and protection were further presented, and in the opinion of President Grove consisted of valuable material for the final settlement of the problem.

President Grove then referred to the action of the last meeting of the association, directing him to compile a list of dealers of the territory covered by the association, and asked what disposition should be made of the list. After lengthy discussion of this subject it was decided to refer the matter of arranging for the publication of a directory of



dealers for the use of the association to a special committee, who will report the result of their work at the next meeting of the association.

President Grove next announced with deep regret the death of A. D. Warner, Sr., of the Charles Warner Co., an active member of the association, and it was regularly moved that a resolution of condolence be sent by the association to Charles Warner, president of the Warner company and a charter member of the association. President Grove also announced the death of the wife of M. A. Reeb, president of the Niagara Gypsum Co., and resolutions of sympathy were voted to be sent to Mr. Reeb.

#### Plan to Take in Virginia Dealers.

The president stated that he had received several inquiries regarding applications for membership to the association from adjacent territory not included in the section covered by the Del-Mar-Col association and believed that it would be advisable to include the state of Virginia in the territory to be covered by the association. This, President Grove stated, would call for an amendment to the constitution of the association, and it was therefore moved by S. Dana Lincoln, of Washington, D. C., that the matter of Virginia dealers being admitted to the membership of the association be referred to the executive committee for their consideration and report at a later meeting. This was unanimously agreed to.

An interesting subject was next presented by President Grove for the information of the members, in which attention was called to the practice on the part of some building material manufacturers to continue to ship direct to the consumer without regard to the prevailing differential that gave the dealer a reasonable protection. President Grove felt that the manufacturer should continue to give the right coöperation to the dealer in the matter of the 5c differential or any other that might prevail in the trade. G. W. Pierce, of the Dexter Portland Cement Co., here called attention to an investigation that he had conducted which showed that the contractor saved money in buying from the dealer and paying 5c a barrel more for cement, using the latter product as an example. The service given the contractor in delivery of the material and other services more than made up the difference between the dealers' and the consumers' prices. As a matter of economy Mr. Pierce stated that contractors are realizing more and more the saving in buying from the dealer and paying the dealer his price in consideration of the various delivery services that are rendered without charge by the average building material dealer. It was thought by a number of members that this would be good educational work for the association to conduct, in pointing out to contractors not already acquainted with this business economy the saving that he might make in buying his material through dealers.

Discussion next took place on the matter of a more liberal differential in the dealers' and consumers' prices on cement. After the subject had been well discussed, showing the increase in the cost to the dealer in handling the material, it was decided to leave the situation to the president, who was requested to report as a future meeting the results of his investigation of the condition.

The meeting here adjourned for luncheon, which was served in the large grill room of the Continental.

#### Afternoon Session.

President Grove, in calling the afternoon session to order, stated that he regretted to inform the members that John Poole, president of the Federal National Bank, of Washington, who was to address the meeting on the general business outlook, was unable to be present but had sent a message to the members, which the president read. Mr. Poole's message dealt with the improved industrial situation, special emphasis being placed on the fact that bank clearances for the previous week totaled nearly five billions of dollars. No such total was

ever before reached in any week in the history of this country. Of special significance was his pert remark, "The world never saw such business activity as engages this country right now."

The president next introduced Edwin C. Graham, vice-president of the Builders' and Manufacturers' Exchange of Washington. Mr. Graham's address was purely a business man's talk for better business practices and more modern business methods for the economic betterment of our industrial welfare. He referred to the pessimist being as dangerous as the optimist, and that the average business man did not think far enough into the future, and what the future meant to his business welfare. "We are now facing a brighter future and the outlook for next year is very bright," said Mr. Graham. "Manufacturers are buying heavy of raw materials which may be due to the possible advance in many of them before long." Speaking of the value of proper business coöperation, Mr. Graham felt that the business man should give his best service in coöperating for the uplift and general improvement of his industry through organization such as the building material dealers were conducting. Mr. Graham pointed out the great business value of a coöperative business relationship between the dealer and the manufacturer. The main point raised by Mr. Graham in this discussion was that the dealer should not be considered the customer of the producer but the representative of the manufacturer and one of his business organization. This makes the dealer stronger, and with the right kind of coöperation he gets the proper recognition from the manufacturer and enjoys a more contented and profitable career.

Mr. Graham concluded his remarks with reference to the practical method of doing business under the Open Price Policy, explaining the manner in which this new business policy is conducted. He believed that the open price had the effect of creating more confidence among business men and that it had the tendency of stabilizing markets through the publication of prices instead of the evils that always existed through the operation of the secret price. A policy of open and above-board methods with the consuming public is best for business and means a more satisfactory business life for all those who serve the public was the opinion of Mr. Graham. The speaker offered his earnest coöperation to the work of the Del-Mar-Col Association at any and all times and thanked the association for the opportunity of getting in touch with their valuable work.

Henry M. Camp, of the Lime Service Bureau, Washington, was next called on to give his experience with the operation of the open-price policy which the bureau is conducting for the eastern lime industry.

As a foreword to his remarks Mr. Camp explained that his presence at the meeting was for the primary purpose of making a report of the general discussion for publication in ROCK PRODUCTS AND BUILDING MATERIALS, and that he wished to convey to the members of the association the best wishes of this publication for the increase in their membership and the commercial value of their work. Mr. Camp further stated the medium which he had the pleasure to represent was deeply interested in the general welfare of the Del-Mar-Col Association and that it is at the service of the association at all times in anything that its representatives could do in building up the membership and for the general improvement of the value of its work to the dealer and to the manufacturer. Through an extensive publication of the meetings of the association greater interest in the work of the organization is aroused, which has the effect of stimulating a greater and more active membership.

Mr. Camp stated that the open price had come to stay, for its adoption by the manufacturer of any of the products meant cleaner and more economic business methods and a more reliable understanding of the markets for the various products. He pointed out that in the conduct of all commercial organiza-

tions care should be taken in the different lines of work to undertake nothing in the improvement of their welfare that would lead directly or indirectly to the fixing of the price or to price agreements which might be construed as a violation of the Federal or state anti-trust laws. There was plenty of work that could be done by such associations of business men that would result in their general betterment in an economical way, such as providing a better product, better sales service, improved delivery service and other lines of service that would tend to raise the standard of their business organization.

Upon the conclusion of Mr. Camp's remarks, President Grove said: "We should appreciate the value of the coöperation of ROCK PRODUCTS AND BUILDING MATERIALS in seeing that proper publicity is given the meetings of the association held from time to time. Our meetings are well covered by this publication, and the reports made by ROCK PRODUCTS to the manufacturing and jobbing public engaged in the building material business are of distinct value to the betterment of our general condition."

It was then voted unanimously that a vote of thanks and appreciation be tendered to ROCK PRODUCTS AND BUILDING MATERIALS for their support to the work of the association and a copy of the resolution to be sent to the office of the publication at Chicago.

S. Dana Lincoln brought up the question of the association having a suitable button or badge to be worn at all meetings of the organization which would show the name of the member and the company which he represented, so that all members would get acquainted quickly and get into personal touch with each other without the formality of introduction. Upon the motion of J. T. Wakeman, of Samuel H. French & Co., the executive committee was authorized to carry out the idea.

President Grove then thanked the members for the splendid attendance and interest shown in the deliberation of the important subjects that had been discussed at the meeting and for the interest that was being manifested by them in the increase of the membership of the association. The meeting then adjourned.

#### Active and Associate Members Present.

E. P. Williams, Alpha Portland Cement Co.  
Francis A. Hyde, Builders' Weekly Guide.  
H. R. Eastwood, Southern Building Supply Co.  
Joseph W. Smith, Smith & Reifeneider.  
W. W. Shearer, Rosslyn Supply Co.  
C. T. Kingsbury, Rosslyn Supply Co.  
J. T. Wakeman, Samuel H. French & Co.  
T. W. Perry, Chevy Chase, Md.  
R. S. Teely, U. S. Gypsum Co.  
J. W. Cook, Cumberland, Md.  
J. B. Enack, Palmer Lime & Cement Co.  
John A. Robb, Penn-Allen Cement Co.  
E. R. Pusey, E. R. Pusey Co.  
Theodore Michael, Washington, D. C.  
D. C. Chesterman, National Mortar Co.  
S. Dana Lincoln, National Mortar Co.  
A. E. Daley, J. B. King & Co.  
C. S. King, Dexter Portland Cement Co.  
W. R. Fox, Philadelphia, Pa.  
Charles G. Waples, Milton, Del.  
J. R. Baxter, Charles Warner Co.  
H. K. Hobart, Niagara Gypsum Co.  
C. A. Erwin, Keystone Gypsum Co.  
W. G. Dutton, Copley Cement Manufacturing Co.  
C. B. Fry, Keystone Plaster Co.  
R. G. Fry, Philadelphia, Pa.  
John J. Peacock, Vulcanite Portland Cement Co.  
John K. Wetter, Atlas Portland Cement Co.  
G. W. Pierce, Dexter Portland Cement Co.  
Charles L. MacNeal, James B. MacNeal & Co.  
E. L. Becker, Tidewater Portland Cement Co.  
Oscar L. Johnson, Rockville, Md.  
T. Edward Clark, Jr., Washington, D. C.  
J. Grason Steffey, Steffey & Findlay, Inc.  
B. L. Grove, Grove Lime & Coal Co.  
P. C. Barber, Grove Lime & Coal Co.  
S. M. Frazier, Jr., S. M. Frazier Co.  
Henry M. Camp, ROCK PRODUCTS AND BUILDING MATERIALS, Washington, D. C., and Chicago, Ill.

The Wilson Lumber & Fuel Co. recently incorporated at Kaukauna, Wis., has succeeded the Valley Lumber & Fuel Co., of that city. George H. Wilson, formerly in business at Russell, Ill., will be secretary-treasurer and resident manager. Lumber, coal, wood, cement and a general line of building material will be carried.

## Numberless Attractions at Building Show

A galaxy of special features such as has never before been brought together, will distinguish the Complete Building Show to be held in Cleveland, Ohio, Feb. 16 to 26.

With a complete house to be given away free, seven monster community exhibits, an architectural competition and more than 200 individual exhibits of materials and equipment for all kinds of buildings, this exposition promises to be the greatest of its kind ever held in this country.

More than 5,000 delegates will attend conventions to be held in Cleveland during this exposition, representing clay-products, lumber, hardware, paints and builders' supplies. These with trade visitors and regular attendance is expected to swell the estimated total for the ten days close to 200,000.

Instead of the usual endless array of individual exhibits of brick, tile, cement and lumber, the interests in these various branches of manufacture have joined hands in community displays of their various products. The lumber dealers, for example, will build several miniature houses of various woods; the tile makers will have sections of exterior walls, floors, partitions, etc.; the face-brick and the paving brick makers will have house, lawn and garden structures; common brick will have a Dutch cottage interior, with monster fireplace; the cement makers will have block, brick and moulded materials.

Many new products will be on display for the first time at the complete building show. Among these will be self-facing hollow building tiles, new shades and styles of brick, large unit brick, cement ornaments, fire-proofing systems employing expanded metals, gypsum and other retardants, in addition to a great number of newly patented safety and labor saving devices for the house, the commercial building and the factory.

The art section will include a number of painters and sculptors at work, and in addition, a model of the prize winning house design with a full size plan of its first story arrangement.

An adjunct of the art section will be a number of bronzes from one of the country's most famous firms of coppersmiths.

An idea of the great variety of exhibits is indicated by the following partial list of exhibitors:

### Building Show Exhibitors.

American Building Brick Co., Cleveland.  
American Gypsum Co., Port Clinton, O.  
Alpha Portland Cement Co., Easton, Pa.  
Atlas Portland Cement Co., New York City.  
Alliance Brick Co., Alliance, O.  
Bishop-Becker-Babcock Co., Cleveland.  
Brick and Clay Record, Chicago.  
Barkwill Brick Co., Cleveland.  
Belden Brick Co., Canton, O.  
Beaver City Manufacturing Co., New Galilee, Pa.  
Barner Mead Lumber Co., Cleveland.  
Broadway Lumber Co., Cleveland.  
Brooklyn Lumber Co., Cleveland.  
Berger Manufacturing Co., Canton, O.  
Cleveland Board Lumber Dealers, Cleveland.  
Cleveland Window Glass Co., Cleveland.  
Cleveland Stone Co., Cleveland.  
Cleveland Builders' Supply Co., Cleveland.  
Cuyahoga Builders' Supply Co., Cleveland.  
Cleveland Material Co., Cleveland.  
Camp Conduit Co., Cleveland.  
Cuyahoga Brick & Shale Co., Cleveland.  
Clay-Worker, Indianapolis.  
Construction, New York City.  
Cleveland Art Association, Cleveland.  
Colonial Pressed Brick Co., Magadore, O.  
Crescent Portland Cement Co., Wampum, Pa.  
Cuyahoga Lumber Co., Cleveland.  
Cleveland Lumber Co., Cleveland.  
Corlett Lumber Co., Cleveland.  
Cleveland City Lumber Co., Cleveland.  
Collinwood Lumber Co., Cleveland.  
Collamer Lumber Co., Cleveland.  
Samuel Cabot, Inc., Boston, Mass.  
Cleveland Electrical Contractors' Association, Cleveland.  
Connelly Co., Cleveland.  
Cleveland Cyclone Fence Co., Cleveland.  
Davis-Hunt-Collister Co., Cleveland.  
Deckman-Duty Brick Co., Cleveland.  
Dunn Wire-Cut-Lug Brick Co., Conneaut, O.  
Donley Bros. Co., Cleveland.

Darlington Brick & Mining Co., Pittsburgh, Pa.  
Euclid Builders' Supply Co., Cleveland.  
Everhard Co., Massillon, O.  
East Cleveland Lumber Co., Cleveland.  
Edgewater Lumber Co., Cleveland.  
Erner Electric Co., Cleveland.  
Far Brick Co., Cleveland.  
Forest City Paint & Varnish Co., Cleveland.  
O. H. Foote Lumber Co., Cleveland.  
Fisher-Wilson Co., Cleveland.  
Fisher-Jirouch, Cleveland.  
E. Fisher Co., Cleveland.  
General Fire Extinguisher Co., Providence, R. I.  
Glenville Lumber Co., Cleveland.  
Gray Lumber Co., Cleveland.  
Gill Lumber Co., Cleveland.  
Home Building Corporation, Cleveland.  
Holland Furnace Co., Holland, Mich.  
Huron Portland Cement Co., Detroit, Mich.  
Heppes Co., Chicago, Ill.  
Independent Lumber & Door Co., Cleveland.  
Kansas Buff Brick Co., Kansas City, Mo.  
Kelley Lime & Transport Co., Cleveland.  
J. B. King Co., Buffalo, N. Y.  
Knapp Bros. Manufacturing Co., Chicago, Ill.  
Kelm Brick & Tile Co., Louisville, O.  
Kohler Co., Chicago, Ill.  
Keasbey & Mattison Co., Cleveland.  
Lakewood Masons' Supply Co., Lakewood, O.  
Lehigh Portland Cement Co., Allentown, Pa.  
Lake Shore Sawmill & Lumber Co., Cleveland.  
Lakewood Lumber Co., Lakewood, O.  
Lake Erie Lumber Co., Cleveland.  
Lorain Street Lumber Co., Cleveland.  
Ludowici-Celadon Co., Cleveland.  
Martin-Barrios Co., Cleveland.  
Murphy Door Bed Co., Chicago, Ill.  
Minneapolis Heat Regulator Co., Minneapolis, Minn.  
Mount-Squires Co., Cleveland.  
Mathews Manufacturing Co., Cleveland.  
Martinsville Brick Co., Martinsville, Ind.  
Mills-Carlton Co., Cleveland.  
J. H. McLaughlin Co., Canton, O.  
National Paving Brick Association.  
John Henry Newson, Cleveland.  
National Heater Co., Cleveland.  
National Lumber Manufacturers' Association, Cleveland.

Nicola, Stone & Myers Co., Cleveland.  
Ohio Quarries Co., Cleveland.  
Ohio Clay Co., Cleveland.  
Ohio Face Brick Dealers' Association.  
Prudential Building Co., Cleveland.  
Pattison-Leitch Co., Cleveland.  
Potter-Teare & Co., Cleveland.  
Prasse Lumber Co., Cleveland.  
Peters Millwork & Lumber Co., Cleveland.  
Reinforced Concrete Flooring Co., Cleveland.  
ROCK PRODUCTS AND BUILDING MATERIALS, Chicago.  
George Rutherford Co., Cleveland.  
Reynolds Asphalt Shingle Co., Grand Rapids, Mich.  
Redwood Manufacturers' Association.  
Red Gum Manufacturers' Association.  
Robinson Clay Products Co., Akron, O.  
Sandusky Portland Cement Co., Sandusky, O.  
Southern Pine Association, New Orleans, La.  
Standard Manufacturing Co., Cleveland.  
W. C. Shires, Cleveland.  
Scientific Heater Co., Cleveland.  
Southern Cypress Manufacturers' Association, Cleveland.  
John Starkey, Canton, O.  
Stark Brick Co., Canton, O.  
Saginaw Bay Co., Cleveland.  
South Cleveland Lumber Co., Cleveland.  
Singletary Lumber Co., Cleveland.  
J. A. Saunders Co., Cleveland.  
N. R. Snell, Cleveland.  
Seattle Cedar Lumber Manufacturers' Association.  
A. Teachout Co., Cleveland.  
Underwriters' Fire Equipment Co., Cleveland.  
Union Metal Manufacturing Co., Canton, O.  
Vitrified Clay Industry, Columbus, O.  
Vanpart Brick Co., Vanpart, Pa.  
Vulcanite Portland Cement Co., New York City.  
Webber Co., Cleveland.  
Whitacre Fireproofing Co., Waynesburg, O.  
Whipple Art Glass Co., Cleveland.  
Wadsworth-Howland & Co., Boston, Mass.  
Wilson Avenue Lumber Co., Cleveland.  
Whitmer-Jackson Sash & Door Co., Cleveland.  
C. S. Wert, Kendallville, Ind.  
Western Electric Co., Cleveland.  
Yale & Towne Co., New Britain, Conn.

### HAYES FORMS NEW BUFFALO COMPANY.

Charles L. Hayes, who for the last few years has been identified with the Buffalo Builders' Supply Co., has organized the Acme Builders' Supply Co., Inc., and established offices in the Prudential building, Buffalo, N. Y. The concern has been incorporated with a capital of \$50,000 to carry a general line of builders' supplies. In addition to Mr. Hayes, the directors are George L. Gastel, Jeremiah J. Hurley, Bartholome Oddo and T. Regis O'Brien.

## Get Busy with Specialties.

The newer lines of builders' supply specialties really belong to and are being offered to our dealers in preference to any other retail avenue. Staple lines of cement, lime, plaster and clay products constitute the biggest proportion of the dealers' tonnage, but the specialties have a better margin of profit and can easily be made to increase in importance and yield the larger part of net returns.

No stock is complete without a few rolls of triangle mesh reinforcement of the proper gauges for use in concrete porch floors and other places needed in every building job that is intended to be a good one. A few tons of expanded metal or steel lath for outside cement surfaces, now growing more popular all the time, are indispensable. Water-proof coatings, and coloring materials in both liquid and dry form, sell themselves on sight and are being called for more and more.

These things belong to the supply dealer, and it is his province to consistently and energetically promote their widest use in the community that he serves.

There is no owner who will not spend the two or three dollars to supply wire mesh reinforcement in the construction of his porch floor when he is shown that it is the only way to be sure that shrinkage or settlement cracks will not deface the work. Nobody will be so foolish as to dispense with corner-head if its advantages are pointed out. The permanent economy of cement plastered and rough cast exteriors is so attractive that it only has to be mentioned to bring about a sale. Ceilings and partitions plastered on metal lath do not crack because there is no possibility of warping or drying out, and nobody wants to pay current wages for plastering without having it done once for all ways. The right recommendation for waterproofing or coating basement walls, floors, etc., is always acceptable and worth to every owner ten times the cost.

The dealer himself or the salesman who visits the jobs where deliveries are being made, must get himself well posted in all these special requirements of up-to-date good work, and see that his customers are taken care of in these important details. Otherwise there will very soon come along some one who seeing the opportunity left open by your neglect will give you the kind of competition that allows you to worry with the staples while he absorbs the fatter profits of the specialties that you are overlooking.

To make the biggest kind of success out of the line of specialties requires a little work in getting the information properly in mind with the sales talk that goes with it. You can never begin to improve your business methods any younger than you are now. There is no better time to resolve to build up your business than right now before the season opens. It's a good new year's stunt, and there is money in it too.

### A. J. CLEMENTZ PASSES AWAY.

A. J. Clementz, a prominent builders' supply dealer, of Massillon, Ohio, died on Dec. 30, after an illness of seven weeks. He was operated on for gall stones and to all external appearances was rapidly regaining his health. Two weeks before his death he suffered a relapse. This, combined with kidney trouble, caused his death. Mr. Clementz was fifty-six years old and is survived by his widow and five sons.

Prior to entering the builders' supply business, he was a general contractor for ten years. For the last nineteen years he conducted a feed store and builders' supply business at Massillon. He was an ardent member of the Ohio Builders' Supply Association and never lost an opportunity to attend its conventions.



## Waterproofing Dealers Go to School.

The dealers and salesmen who represent The Trus-Con Laboratories, of Detroit, in the New York State territory, attended a two-day convention and school of instruction in Detroit, Dec. 28 and 29, held under the auspices of The Trus-Con Laboratories and known as "Bigger Business Pilgrimage."

The party arrived from Rochester on a special car on the morning of Tuesday, Dec. 28. They were met at the station by a score of gaily decorated automobiles and were driven to the Hotel Tuller for breakfast.

The party then drove to The Trus-Con Laboratories, where lectures and discussions on the various waterproofings, dampproofings, and technical coatings manufactured by the laboratories were held until six o'clock. An informal dinner at the Tuller was followed by the attendance of the entire convention at the Detroit Opera House to witness David Warfield's production of "Van Der Deeken."

Wednesday's program consisted of lectures and discussions, and also a trip through the Ford Motor Co.'s plant, at which place moving pictures of the assemblage were taken. The "Bigger Business Pilgrimage" closed with a formal dinner at the Phoenix Club of Detroit.

Among those in attendance were several prominent engineers, among whom were C. Arthur Poole, supervising engineer of the Rochester sewage disposal plant, and C. C. McWilliams, engineer of the 20,000,000-gallon Schenectady reservoir.

The American Clay and Cement Corporation, of Rochester, N. Y., was represented by E. J. Hutchinson, Edward Stallman, Claude E. Wright and Howard Pinkley; Driscoll Brothers, of Ithaca, by Claude A. Baldwin and Edwin H. Hulbert; The Albany Builders' Supply Co. by Henry Borkhurst and J. S. Buchanan; The American Hard Wall Plaster Co., of Utica, by J. L. Hughes and S. B. Deifenbach; The Paragon Plaster Co., of Syracuse, by W. K. Squier and Emil Hansen; The Buffalo Builders' Supply Co., by William E. Gardiner and J. M. Hawkins.

Thomas Pierrepont, of Rochester, undoubtedly one of the best-known master painters in the country and an authority on flat wall finishes, and Prof. B. B. Robb, of the rural engineering department of Cornell University, were also at the convention.

The "Bigger Business" convention and school of instruction represents the first big business meeting held by workers in the field of waterproofings, dampproofings, and technical paint products used in connection with general construction work.

The Trus-Con Laboratories is declared to be one of the largest exclusive manufacturers of these products for architectural purposes. The concern has a world-wide business, as it ships to practically every country and maintains an extensive foreign organization.

Seven years ago the concern was an idea existing in the minds of its founders. Now it is represented by a seven-acre plant on the corner of Caniff avenue and the Grand Trunk railway tracks, and the brand "Trus-Con," with its lighthouse trade mark, is known among architects, contractors and builders everywhere.

The management of The Trus-Con Laboratories is in the hands of R. A. Plumb, general director; C. S. Potter, assistant general director; I. L. Hirschman, sales director; E. G. Frank, promotion director, and L. O. Gilbert, manufacturing director.

## WISCONSIN BUILDERS TO MEET.

Madison, Wis., Jan. 4.—The fourth annual convention of the Wisconsin Master Builders' Association will be held at Madison, Jan. 14 and 15 in the assembly chamber of the new state capitol building. Delegates and representatives from twenty-three cities throughout Wisconsin will attend.

Affiliated associations in Milwaukee, Janesville, Watertown, Appleton, Oshkosh, Green Bay, Beloit, Kenosha, Racine and other cities have promised large delegations.

Well known speakers have been secured, among them being H. L. Lewman, Louisville, Ky., president of the National Association of Builders' Exchanges, whose topic will be "What is Best for the Building Industry?" Mr. Lewman was the principal promoter of the new uniform contract documents recently approved and adopted by the American Institute of Architects.

## Philadelphia for a Greater Exchange.

Early in January, on the 10th, 11th and 12th to be exact, a campaign for a greater Philadelphia Builders' Exchange is to be started by the members of the exchange to secure a membership of 1,000 members.

During the past twenty-seven years Philadelphia has been fortunate in having this exchange among its business organizations working quietly but effectively for the betterment of the building conditions of the city, for adjustment and settlement of labor troubles, for the settlement of disputes by unbiased arbitration, and for the securing of the passage of such legislation, municipal, state and national, wherever possible, as should benefit those engaged in the building business.

In these days, when everyone is giving much thought to insurance, a little time and a little thought should be given the exchange which has acted in the past, and will act in the future, as an insurance to its members against the troubles which so frequently arise in the building world.

Not only in Philadelphia, but in practically all the larger cities of the country campaigns are being started to secure greater cooperation among men engaged in like industries.

In this city, at least, two thousand men engaged in the building business are eligible to membership in the exchange. The exchange needs the moral support of these two thousand men, and these men need the protection and assistance that the exchange can give them.

The exchange is the only common ground, club as you may call it, since it has many features that you will find in club life, where members of the building industry may associate and get personally acquainted, to the end that each one's helpfulness to the other may be increased, and opportunity to gain more business may be increased, provided full advantage of such opportunities is taken by the members.

"It is for the purpose of bringing these matters home to non-members of the exchange that this campaign is to be started," says President George J. Watson. "Upon securing the thousand members the dues will be reduced from fifty dollars to twenty-five per annum. While there is no particular way in which we can guarantee dividends, yet we believe this investment will pay several hundred per cent. a year in increased opportunities.

"Teams of two will be under the management of the chairman of the membership committee, W. Nelson Mayhew, president of the Iron Trades Association of Philadelphia. These teams will compete for two handsome trophies, to be awarded those securing the largest number of candidates. Application for membership should be made to the members of the various teams, chairman of the committee, the president or secretary Charles Elmer Smith.

"Let all engaged in the building business get together and form a greater exchange, which shall be as helpful or even more helpful to the building industry of the future, as the old exchange has in the past. Philadelphia needs more and more, and better and better buildings, and to obtain this end a greater exchange is an absolute necessity. Let all those who are connected in any way with the building trades help these teams make this cam-

paign as successful as any Philadelphia has ever seen, and with this assistance the membership of the 'greater exchange' will be vastly beyond the thousand members that we are endeavoring to obtain."

## Will Meet at Philadelphia.

The annual convention of the Building Material Dealers' Association of Eastern Pennsylvania will be held at the Hotel Walton, Philadelphia, on Thursday, March 9. The May meeting of the association in Philadelphia was the largest and most successful in its brief history. Owing to the central location and the availability from practically every town, it has been decided that the next meeting, which will be the annual one, be likewise held in Philadelphia.

The Building Material Dealers' Association of Eastern Pennsylvania is a thriving organization and in the short period of its existence has accomplished considerable in the interest of every building material dealer.

The officers and executive board are working hard to accomplish the results which the association stands for, but the cooperation of every member is necessary. The building material business has long needed organization in order to bring about stability and to make working conditions such that any building material business can be run on a more definite basis to secure firm profits.

"There are associations of retailers in practically every line of successful endeavor. An analysis of statistics will show that the retail businesses which are most profitable are those which have been organized not only individually but collectively. The successful retailer is one who meets his business contemporary to discuss the matters of mutual interest and the abuses in the business; the one who evolves with his fellow dealers ideas and means of bettering conditions all along the line," says President George F. Erich. "The fundamental essential to the success of our association is confidence—we must have confidence in each other and we must have confidence in the manufacturer from whom we purchase our materials; we must have confidence in the consumer to whom we sell. But that confidence must be merited and above all things must we handle our business honorably.

"The unfortunate condition has existed which might be termed as the depravity of the building material business. There have been unscrupulous manufacturers, unscrupulous dealers and unscrupulous consumers. In previous years the building material business has lacked confidence in itself and our effort through organization should be to put the building material business on a higher plane and with the cooperation of all members, both active and associate, this result can be accomplished to the advantage of all. As the executives of this association are working hard in its interests, they are anxious to make it a live asset to every member. They are anxious at all times to receive the suggestions of members and to discuss the problems which confront everyone. Correspondence already engaged in since the inception of the association has been the means of materially increasing the satisfaction of many dealers with new conditions in the business.

"While no individual or association may dictate as to whom manufacturers should sell, we are all anxious to have the building material business of the country handled by dealers. In the evolution of distribution we find manufacturers of most staple commodities generally come to the realization that the most economical method of merchandising is to the consumer through the dealer. Through the abuses which have existed in the building material business we feel that to some extent manufacturers have been hampered in their problems of effecting economical distribution by their inability to ascertain clearly as to what individuals or concerns handle materials for re-sale."



# N. B. S. A.

## Will You Be There? Of Course

Just a little more than a month remains to the time set for the calling to order of the seventeenth annual meeting of the National Builders' Supply Association, and from all advance indications it begins to appear as though the meeting this year in Cleveland will outrival any previous gathering; and there are many reasons why this should be.

In the first place, the association has during the past year enrolled a larger number of new members than has been their good fortune to secure in a long, long time. Everybody realizes, and thoroughly so, that the industry which possesses the best form of organization within itself, and which serves to bring the members of such an industry closer together, is the one that is ever in a position to take full advantage of times that are prosperous, and knows further how to conserve its resources when conditions change.

Notwithstanding these facts, however, the dealer, who has in the past always taken an active interest in association work, knows just how hard it has been for him to awaken the same lively interest in his fellow-dealer, and it is because of this lack of awakening to his own welfare that we find conditions as they are today.

Realizing this apparent antipathy to the work of an association that was organized solely for their benefit, the officers of the N. B. S. A., in conjunction with the assistance of a good many of its members, last year perfected a plan which they believed to be one that could not be cast aside by even the most pronounced anti, and as to how well it has succeeded, it is but necessary to state that over 150 new members have been secured since its inception a few months ago.

It is impossible to go into the details of this plan in the manner necessary to make its good qualities apparent here, but the association has arranged to devote the afternoon of the second day's session of the convention to a complete analysis of the proposition, and we venture to predict now, that nothing ever presented by the association in the past will receive more deserved cooperation.

Because of the work that has been necessary to put this new plan into effect and get it into good working order, so as to have something concrete to offer the association at its convention, many members who probably have not come into contact with it, have been of the opinion that activity within the association was lacking. In order to refute this idea, and to further show the dealer why he should support the N. B. S. A. in even a stronger manner than ever before, it is the hope that each and every member will be present at the convention, and if the report of the work that has been done and will be done in future, does not justify your further support, we will miss our guess.

The association has also succeeded in completing final arrangements whereby one of the old and well-established mutual insurance companies has agreed to accept as policy holders in the profit-sharing class, all members owning desirable fire insurance risks.

This insurance department, complete details regarding which will reach all of the members within a few days, will absolutely repay every member who elects to take advantage of any of the many services it will offer, far and above the cost of association membership. In addition to the dividends which mutual companies pay, they also offer

the complete services of a company long established in the business to any of our members who may desire to ascertain information regarding their insurance policies, the furnishing (free of charge) of an adjuster to represent the insured in case of loss, etc.

Now is the time, therefore, to make your arrangements for attendance at the seventeenth annual convention, to be held in Cleveland, Ohio, Feb. 17-19, at the Hotel Statler. It is always well to make reservation before hand, and all you need do is drop a line to Secretary Desmond, 1211 Chamber of Commerce Building, Chicago, and he will see that your wishes are taken care of.

### DISTRICT MEETINGS OF THE N. B. S. A.

On Wednesday evening, Jan. 12, a meeting of the dealers in the Muncie, Ind., district, will be held in that city at the Delaware Hotel. Reservations which have been received indicate that there will be a big attendance from the surrounding territory, and a lively and interesting meeting will no doubt result.

On Thursday evening, Jan. 13, the regular monthly meeting of the South Bend district, known as District Committee No. 3, will be held at the Rumely Hotel, Laporte, Ind.

The meetings of this district have grown to be very interesting and educational affairs, and the activity of the members speaks well for the future success of their efforts. At this meeting, Bernard McNulty, of the Mitchell Lime Co., will give a talk on "Hydrated Lime and What the Dealer Should Know About It," and the members will, without any question, thoroughly appreciate the subject, as Mr. McNulty knows how to deliver it.

In addition, we understand that Chairman Hildebrand has something to spring along the line of entertainment, and all in all, predictions are that it will be one swell meeting.

### RETAILERS TO MEET AT LINCOLN.

Arrangements have been completed for a meeting of the dealers in the Omaha district, to be held at the Lincoln Hotel, Lincoln, Neb., on Thursday, Jan. 20.

Invitations have been extended to all the dealers in Lincoln, Beatrice, Omaha, Des Moines, Sioux City, and other surrounding cities to be present at this meeting, and inasmuch as it occurs during the time of the Nebraska Lumber Dealers' Association convention, it is expected that a complete representation will be on hand.

The meeting will be called to order at 10:00 a. m., on the morning of Jan. 20, and will be attended by Secretary Desmond, who will outline to the dealers present, the plan which the N. B. S. A. has succeeded in putting into effect in other territories, and the success with which it has met. Another speaker will be George A. Olsen, retail editor of ROCK PRODUCTS AND BUILDING MATERIALS. It is also expected that several very active members of the Minneapolis and St. Paul section will be present, and, of course, President J. H. Allen, who claims Lincoln as his home will also be there to lend his aid.

## West Virginia Dealers at Wheeling.

The next annual meeting of the West Virginia Lumber & Builders' Supply Dealers' Association will be held at the Hotel Windsor, Wheeling, W. Va., on Friday and Saturday, Feb. 18 and 19. This will be the third annual convention of this association and according to Secretary-Treasurer C. J. Dickerson, the prospects are very bright for an interesting and well-attended meeting.

Of importance to West Virginia dealers, and listed as one of the subjects to be taken up at this meeting, is a mechanics' lien bill, similar to that presented to the last legislature and which failed to go through. Further details of the program will be printed in subsequent issues of ROCK PRODUCTS AND BUILDING MATERIALS.

### NEW ENGLANDERS TO MEET AT BOSTON.

The annual convention of the New England Builders' Supply Association will be held in the New American house, Boston, Mass., on Thursday, Feb. 24. President Charles M. Kelly promises an interesting program and anticipates a good attendance.

W. L. Clippard, announces a change in the name of his establishment to the Arkansas Builders' Supply Co. As formerly, the company will deal in a general line of building materials and builders' specialties. Mr. Clippard, who is Arkansas vice president of the National Builders' Supply Association, states that members of the company are jubilant over the prospects of the new year and are getting ready for the big business that they feel is sure to come.

### ILLINOIS RETAILERS TO MEET.

The nineteenth annual convention of the Southern Illinois Retail Dealers' Association will be held at Carbondale, Ill., Jan. 20 and 21, according to announcement by Secretary R. H. White.

Mr. White advises that a good program of "Speaking, Discussion, Music and Good-Fellowship" is being prepared. During the meeting at Carbondale visits will be made to the Southern Illinois Normal School and to the large tie treatment plant at Carbondale. Automobiles will be provided to convey the guests on these trips. A banquet for all and a Hoo-Hoo concatenation and other entertainment features will make every one feel at home.

A ladies' entertainment committee will give royal treatment to the ladies, and all members have been invited to bring their wives to the convention. Hotel Roberts will be headquarters for the convention, and the Carbondale committee is leaving no stone unturned in preparing for a big and successful meeting.

### WESTCHESTER COUNTY DEALERS TO EAT.

New York, Dec. 24.—The annual banquet of the Building Material Men's Association of Westchester County, N. Y., will be one of the biggest and most ambitious of its kind ever held by the association. It is to be held in the Hotel Manhattan, this city, on the evening of Tuesday, Jan. 25. The arrangements are in charge of A. M. Dinkel, of the Dinkel Jewel Lumber Co., of Tarrytown, Alfred Malsted, of New Rochelle, and a special committee.

# NEWS of the TRADE

## 1915 National Construction.

New York, Jan. 4.—National construction covering the entire country for 1915 complete up to December 20 and estimated for the last nine days in the months using Bradstreet statistical table as a base, gives a total net gain in construction of 3.5 per cent. Three months ago there was an actual decrease for the country of five per cent from last year's figures. Therefore in the last quarter there has been an increase in projected building construction in at least 117 cities of 8.5 per cent in the middle of what is ordinarily the dullest period in the building year. When these totals are added to the forty-six per cent of building projects filed in 1914 that failed to go ahead during the closing of the financial markets of the country, the volume of business that contractors may consider as being alive at this date is in excess of \$1,000,000,000, as compared with the actual total filings as reported this year amounting to \$807,772,200. There never has been a year when national prospective construction has exceeded the billion dollar mark.

### NATIONAL PROJECTED BUILDINGS COMPARED.†

	1914.	1915.	Change per cent.
Jan.—146 cities....	\$ 45,999,862	\$ 55,514,979	D. 17.1
Feb.—148 cities....	51,376,112	62,784,999	D. 18.1
March—150 cities...	85,610,997	83,388,638	I. 2.6
Total 1st quar....	\$182,986,971	\$201,688,616	D. 9.2
April—150 cities....	\$ 83,364,426	\$ 97,405,899	D. 14.4
May—146 cities....	82,761,751	86,809,963	D. 4.6
June—150 cities....	85,532,913	82,999,953	I. 3.0
Total 2d quar....	\$251,659,090	\$267,215,815	D. 5.8
Total 6 months...	434,646,061	468,904,431	D. 7.3
July—152 cities....	\$ 82,857,507	\$ 78,786,703	I. 5.1
Aug.—152 cities....	62,976,175	65,703,443	D. 4.0
Sept.—153 cities....	53,356,994	79,730,232	D. 33.0
Total 3d quar....	\$199,190,676	\$224,220,378	D. 11.1
Total 9 months...	633,836,737	693,124,809	D. 8.5
Oct.—152 cities....	\$ 52,212,491	\$ 66,141,492	D. 21.0
Nov.—151 cities....	43,882,352	50,648,911	D. 13.3
Dec.—150 cities....	41,728,593	68,812,935	D. 39.3
Total 4th quar....	\$137,823,436	\$185,603,338	D. 25.7
Total 12 months...	771,660,173	878,728,147	D. 12.1
	1915.	1914.	Change per cent.
Jan.—155 cities....	\$ 45,764,309	\$ 49,944,341	D. 8.3
Feb.—155 cities....	45,769,864	52,177,227	D. 12.2
March—155 cities...	75,250,465	86,795,424	D. 12.2
Total 1st quar....	\$166,784,638	\$187,916,992	D. 11.2
April—155 cities....	\$ 79,469,221	\$ 84,565,850	D. 6.0
May—155 cities....	85,513,438	85,212,713	I. .3
June—155 cities....	67,542,904	86,458,820	D. 21.8
Total 2d quar....	\$232,525,563	\$256,237,383	D. 9.2
Total 6 months...	399,310,201	444,154,375	D. 10.0
July—155 cities....	\$ 71,569,657	\$ 83,640,692	D. 14.4
Aug.—155 cities....	71,803,460	63,448,824	I. 13.1
Sept.—155 cities...	69,777,282	3,443,480	I. 30.5
Total 3d quar....	\$213,150,399	\$200,532,996	I. 6.2
Total 9 months...	612,460,600	644,687,371	D. 5.0
Oct.—155 cities....	\$ 70,254,657	\$ 52,535,818	I. 33.7
Nov.—137 cities....	65,057,543	41,724,404	I. 55.9
Dec.—117 cities....	\$60,000,000	40,000,000	I. 33.3
Total 4th quar....	\$105,312,200	\$134,263,222	I. 32.8
Total 12 months...	\$807,772,200	778,950,593	I. 3.5

† Courtesy Bradstreets.  
\* Record and Guide Estimate.

### MEMPHIS MATERIAL NOTES.

Memphis, Tenn., Jan. 4.—Mr. De Voy, of the Union Sand and Material Co., states that the 1916 outlook in material is fair and that the gravel business has been very quiet the last few months. The

firm has abundant river facilities in the way of boats, etc., but the demand has been slack. The cement trade is stronger. The company anticipates that when the winter season, generally brief in this section, has passed there will be considerable building.

The Crump Lime and Cement Co. found 1915 a year of medium activity, but not like its predecessors locally. The firm looks for a good spring business. On cement, lime, sewer pipe, etc., it is finding a normal winter business.

The Fischer Lime and Cement Co., Inc., has completed its articles of incorporation and will continue its operations on materials exactly as before. During the past year the company materially enlarged its facilities at the Little Rock, Ark., branch.

Thomas, Harmon and Hickey Bros., contractors, have completed the Bayosa tunnel, one of the greatest projects of the North Memphis levee system. The work has been accepted by the city.

A. L. Banning, Jr., secretary of the Memphis Builders' Exchange, is planning a line of winter entertainment and several new systems are being worked out since he took charge of the office.

R. E. Montgomery, president of the Building Material Men's Club of Memphis, is head of the Lee Lumber Co. The other officials are from a varied line of material interests and the club has a bright future for 1916.

Material is being assembled in the South Memphis yard of the Illinois Central Railroad for the erection of a \$200,000 repair shed. Construction work, it is reported, will begin in sixty days.

### EASTERN CANADA BUSINESS SUFFERING.

Toronto, Jan. 3.—The year just passed has not been a very busy one for the dealer in building materials in Eastern Canada. With the exception of November, all the building returns have shown decreases. There have been some bright spots, however, such as Hamilton, where a number of public works, including two hospitals and a number of factory buildings, were erected. Towards the close of the year the railways became active and a number of large buildings, notably the large union depot at Toronto, which had been contemplated for some time, were proceeded with.

With the drop in demand, the prices of such materials as brick and plaster fell very low. Few brick plants were in operation, and while dealers report that orders were received in large numbers they were small and aggregate compared with last year was smaller.

The following are the figures for Toronto for the year, which are the only ones available. While some other centers will have a better showing, this represents about the average:

	Year's Business.	Permits.	Erections.
1914.....	\$20,694,288	6,603	8,953
1915.....	6,651,889	4,407	5,212
Decrease.....	\$14,042,399	2,196	3,741

### PACIFIC COAST BUILDING.

San Francisco, Jan. 1.—The past month has been rather dull, owing to seasonable weather conditions; but general or preliminary contracts for important buildings have been quite numerous for this time of year, especially in San Francisco and the immediate vicinity. The architects also have more work on the boards than for a long time past.

## Cincinnati Dealers Expect Good Year.

Cincinnati, Ohio, Jan. 4.—The close of 1915 and the beginning of 1916 finds the material dealers of this city in an extremely optimistic mood, based firmly upon the excellent business of the past year and the even more excellent prospects ahead. Virtually every retail firm in the city found the year a good one, the latter half, of course, being much the better; and while the depression of the first part of the year operated to cut down the average somewhat, there is little disposition to mourn over it in view of the way in which the latter part of the year came to the front.

The aggregate estimated value of improvements for which permits were issued by the building commissioner's office during 1916 in Cincinnati was \$14,025,330, which sets a new record for the city, running \$642,333 over the previous high record, which was made in 1911. As compared with 1914, which was not a really bad year, by any means, the increase was \$5,204,887, from which it may be gathered that there was a fairly healthy activity in projected building in Cincinnati during the year. The best of it, however, lies in the fact that so much of the work still lies ahead, as far as the material trade is concerned, and thus gives in itself a substantial guaranty of big business during 1916.

One of the largest and most interesting jobs of the year in Cincinnati will certainly be the new building of the American Tool Co. The structure, according to preliminary plans which have been prepared, is to be four stories in height and 250 feet square, and will cost about \$400,000. It is to be of the most modern factory construction and completely fireproof, and will therefore present opportunities for the sale of some high-priced specialties in the way of roofing, metal sash and similar goods, as well as the cement, brick and other material which will be required.

## Milwaukee Expects Banner Year.

Milwaukee, Wis., Jan. 4.—As anticipated earlier in the season, the total building investment in Milwaukee during 1915 showed a substantial gain over that of the previous year. Figures prepared by Building Inspector W. D. Harper show that 3,881 permits were issued for structures to cost \$12,311,397, as compared with 3,865 permits and an investment of \$10,253,036 during 1914. Conditions in the building field were quiet during the first few months of the year, but there was unusual activity during the last six months. Inspector Harper is confident that the investment during 1916 will be close to \$17,000,000. During the month of December there were 166 permits issued, representing an expenditure of \$760,467, as compared with 132 permits and an investment of \$430,007 during the corresponding month in 1914.

Building supply dealers seem to be well satisfied with the business received during the latter part of 1915 and are now most optimistic regarding the coming year. There have been enough large building projects actually launched in Milwaukee to insure plenty of building activity and a good business for several months. The Plankinton Arcade building, involving an expenditure of more than \$1,000,000, is only one of the projects. The work of razing the west portion of the historic Plankinton hotel is nearly completed.



### Conditions in Western Canada.

Winnipeg, Man., Jan. 4.—Business in the building and engineering and allied industries in Western Canada are, during the last week of December and the first week in January, very quiet owing to the cold weather retarding business progress.

The prospects for 1916 seem to be very bright. There is very little unemployment. Money is far from scarce. Farmers are paying debts with promptitude. Builders' supply firms are in fairly good shape considering the miserable business conditions existing during 1914 and they look eagerly to next spring seeing a revival in the building trade.

It is interesting to note that Canada's exports for November were \$94,436,093 while imports for the same month amounted to \$42,217,559, or an excess of \$47,000,000 of exports over imports, the greatest in the history of Canada. For the first eight months of the present fiscal year the imports were \$298,000,000 and exports \$452,000,000 which leaves a trade balance in our favor of \$154,000,000. During the same period last year, the imports were \$318,000,000, and exports \$314,000,000, or a trade balance against us of \$4,000,000. Of our enormous exports for November, the greatest increase was in agricultural products, being \$53,936,837, as against \$18,846,286 in November, 1914. The exports of manufactures were doubled, being \$13,231,022 for November, 1915, and \$6,376,500 in the corresponding month of 1914.

On December 19 the ceremony of touching off the fuse that fired the last blast on the center heading of the big five mile tunnel of the Canadian Pacific Railway Co. under Mount MacDonald, at the highest point in the Selkirk range of the Canadian rocky mountains, was blown through. In 1912 C. P. R. officials started to bore this tremendous tunnel which has just been completed at a cost of \$6,000,000. The contract was let to Foley Bros., Welch & Stewart. The building of the tunnel shortens the distance by four and one-half miles and it lowers the grade nearly 600 feet and cuts out five miles of snow sheds in a distance of thirteen miles, so that the cost of construction will soon be offset by the lessening cost of operation and by the cost of the maintenance of snow sheds. There is actually built twelve miles of new line, of which five miles of the tunnel is a part. It is the longest tunnel on the North American continent until the Moffat tunnel, fifty miles west of Denver now under construction is built, which will be one mile longer. The C. P. R. tunnel when completed will be twenty-three feet high by twenty-nine feet wide, carrying a double track railway. It is expected to be finally completed in July, 1916.

Showing that spring, 1916, is going to be a fairly good one for the building trade, The Bank of Hamilton announced last week that it is going to erect a handsome reinforced concrete structure on the site occupied by the present building, which is to be razed. The T. Eaton Co. also announces that it will erect in the spring a five-story reinforced concrete warehouse.

The building permits issued during the first year of the war—1914—for Manitoba, Alberta and Saskatchewan (towns and cities only) showed a total of \$28,165,000. Manitoba led the three provinces with permits for the year totalling \$13,360,937, Alberta coming second with \$10,579,273, and Saskatchewan third with \$4,224,843. The permits for 1915 were much smaller in all three provinces, eastern and western, but in Manitoba and Alberta the actual buildings under construction this year included a large number for which permits were taken out in 1914.

An interesting convention and banquet was held at Winnipeg last Tuesday in connection with the Canadian Credit Men's Association. A sales manager's Association was formed, and many houses took tables at the banquet at which there sat the

head of the house, the credit manager, the sales manager and the travellers. This departure is unique in Canada, and it is expected that the eastern provinces will follow the Manitoba men's example.

### K. C. EXPECTS BUILDING REVIVAL.

Kansas City, Mo., Jan. 4.—Apparently this city is on the verge of an active building revival. There has been a marked increase in larger buildings started during the last part of 1915 and many new projects are about to be announced.

Figures just made public by the city building department show that permits totalling \$10,574,930 on 3,394 jobs were issued in 1915, an increase from a total of 3,252 permits, aggregating \$10,204,970 for the previous year. The gain, however, is all within the last six months. The first half of 1915 was greatly under the same period of 1914 but a growth in the volume of construction since the early summer has made the year's total the larger.

The new building year will see several big jobs held over, uncompleted, from 1915. Among these are the one-half million dollar St. Joseph Hospital, the \$100,000 Nettleton Home, the eight-story Firestone Building, the \$100,000 home of the Southwest News Co., the \$160,000 Ridge Arcade, the Kansas City Southern million bushel concrete elevator, the one-quarter million dollar building for the Ride-nour-Baker Grocery Co., and extensive additions to the assembling plant of the Ford Motor Co. in the Blue Valley district.

### Boston Busy Building.

Boston, Mass., Jan. 4.—Building permits issued in the last half month of 1915 were for 250 projects, with a valuation of \$3,914,000, according to the statistical report of the F. W. Dodge Co. Metropolitan Boston continues active in building of all kinds, standing in third place among the reports from cities all over the country. From figures to Jan. 1 the volume of contracts awarded in 1915 for construction of all kinds in New England amounted to \$181,888,000, being \$17,577,000 less than the record total of 1912. There was a gain of \$10,000,000 over 1913 and in 1914 the total was \$162,966,000.

Several large garage buildings are going up or under plan for Spring. This includes \$250,000 automobile stores, project of J. E. Gaffney, near "Braves" ball park, and a \$200,000 garage for W. J. McDonald on Washington street, Brighton. The Shawmut Avenue Real Estate Trust new building will cost \$200,000 above ground. There have been a very large number of modern apartment houses constructed during the past twelve months. During the year the Fidelity Trust Co. purchased property on State street for a \$1,000,000 office building.

The building permits of Metropolitan Boston for the year just closed totaled \$63,901,000 on 5,809 projects reported by the F. W. Dodge Co. The statement for the past six years follows:

	No.	Cost.
1910.....	2,490	\$40,173,000
1911.....	4,277	60,286,000
1912.....	4,367	70,382,000
1913.....	4,772	59,836,000
1914.....	5,082	58,922,000
1915.....	5,809	63,901,000

It will be seen that the last year fell behind the record year of 1912 by about \$6,000,000.

### 1915 GOOD YEAR FOR READING.

Reading, Pa., Jan. 4.—The year of 1915 witnessed an excellent volume of business transacted in building circles in this city and exceeded that of 1914 by a handsome sum. The number of new structures erected was larger than during the preceding twelve months, and the total cost was larger, eliminating the Hotel Berkshire permit, which called for over \$400,000. The total sum for new operations was \$300,000 less for 1914 than for 1915.

The number of repair permits was much larger this year, the total running close to the \$125,000 mark. Prominent builders are of the opinion that 1916 will probably be still better and that local members of the trade should prepare for a very busy year.

### Chattanooga to Have Ideal Wharf.

Chattanooga, Tenn., Jan. 4.—With a view to benefitting by the Interstate Commerce Commission's decision in its favor last March, relative to interchange of freight between its boats and railroad lines west of the Ohio river, the Chattanooga Packet Co. has purchased additional river craft so as to give a double service between Chattanooga and Ohio river points. By this means, the opportunity presented to save from 25 to 33 per cent in freight rates will be used to the greatest degree that conditions permit. Anticipating the increased tonnage to be handled at the Chattanooga wharf the city commission was asked to spend a sum of money sufficient to put the wharf in modern condition for handling freight of all descriptions to and from the boats at the minimum cost per ton. Realizing how easy it is to make an expensive error in this direction, the authorities asked competent river engineers to furnish a plan with an estimate of cost for terminals that will meet the needs not only of the present but take care of the future ten or fifteen years. When completed, Chattanooga will have what no other inland city in the United States has—a thoroughly modern and economical method of handling freight to and from the boats with the same ease as it would be handled if shipped by the railroads. At this time the plan for improvement of the wharf has not been selected, although the city has sold bonds to cover the expense. Paving of the wharf area is being considered.

Preliminary organization of the Thatcher Spinning Mill has been perfected and work will soon begin on the buildings, for which nearly a block of land in Ridgedale, near the Standard Processing Co. and the Madeline Hosiery Mill, was purchased.

The Marion Extract Co., Marion, Va., has purchased 12 acres of land and will erect initial buildings to cost about \$100,000.

The Chattanooga Refinery has replaced the wooden buildings with steel, concrete and brick, doubled the capacity and is running full time.

The building committee of the University of Chattanooga early in December awarded the contract for two new campus buildings to T. S. Moudy & Co., of Chattanooga, on their bill of \$53,100, not including heating equipment and landscape work. Work began at once, the contract calling for completion by July 1. It is understood that contracts for other buildings at Chattanooga will be let as soon as the two structures are completed.

### NEW INCORPORATIONS AND VENTURES.

Schottler-Denner Co., Inc., New York City; capital, \$10,000; general realty, construction and deal in building materials; incorporators, John Schottler, 29 South Fifth avenue, Rockaway Park, N. Y.; Sophie Schottler, same address and Mary C. Denner, North Sixth avenue, Rockaway Park, N. Y.

D. Pizzutiello, Inc., New York City; capital, \$3,000; realty, construction and deal in building materials; incorporators, Donato Pizzutiello, 3370 Cruger avenue, Bronx; Joseph Ziccardi, 3370 Cruger avenue, Bronx, and Michael Farrano, 724 Magenta avenue, Bronx, N. Y.

Kere Fireproofing and Building Supply Co., Inc., New York City; capital, \$1,000; manufacture building materials, fireproofing materials, etc.; incorporators, Martin Strauss, 1 St. Nicholas terrace, New York; Max Ash, 37 West One Hundred Seventy-seventh street, and Rose A. Ash, 12 East One Hundred Seventy-seventh street, New York.



# CLASSIFIED BUSINESS DIRECTORY

## BAGS AND BAG TYERS.

Featherhill Mfg. Co. (bag tyers).  
Jalco Company, The.  
Urschel Bates Valve Bag Co.

## BELTING.

H. W. Caldwell & Co.  
Dull & Co., R. W.  
Goodrich Co., B. F.  
Imperial Belting Co.  
Link Belt Co.  
Revere Rubber Co.  
Stephens-Adamsen Mfg. Co.  
Webster Mfg. Company.  
Weller Mfg. Co.

## BRICK.

Belden Brick Co.  
Metropolitan Paving Brick Co.

## BRICK CLAMPS.

The P. D. Crane Co.

## BRICK PAVING.

Metropolitan Paving Brick Co.

## BUCKETS, DUMPING AND GRAB.

Atlas Car & Mfg. Co.  
H. W. Caldwell & Co.  
Hais Mfg. Co., Inc., Geo.  
Hendrick Mfg. Co.  
Lakewood Engineering Co.  
Link Belt Co.  
McMyler-Interstate Co.

## CABLES.

American Steel & Wire Co.  
Dull & Co., R. W.  
Sauerman Bros.

## CALCINING MACHINERY.

Atlas Car & Mfg. Co.

## CARS, INDUSTRIAL.

Atlas Car & Mfg. Co.  
Austin Mfg. Co.  
Hais Mfg. Co., Inc., Geo.  
Lakewood Engineering Co.  
Link Belt Co.  
Stephens-Adamsen Mfg. Co.  
Weller Mfg. Co.

## CASTINGS.

Allis-Chalmers Mfg. Co.  
Traylor Eng. & Mfg. Co.

## CEMENT, CAEN STONE.

Cleveland Blairs' Supply Co.

## CEMENT, HYDRAULIC.

Carolina Portland Cement Co.

## CEMENT, PORTLAND.

Atlas Portland Cement Co.  
Carolina Portland Cement Co.  
Chicago Portland Cement Co.  
Cincinnati Portland Cement Corp.  
Copoly Cement Mfg. Co.  
Crescent Portland Cement Co.  
Huron-Wyandotte Port. Cement Co.  
Lehigh Portland Cement Co.  
Marquette Cement Mfg. Co.  
Northwestern States Portland Cement Co.  
Ohio & Western Lime Co.  
Phoenix Portland Cement Co.  
Sandusky Portland Cement Co.  
Whitehall Portland Cement Mfg. Co.  
Wolverine Portland Cement Co.

## CHAINS.

Chain Belt Co.  
Jeffrey Mfg. Co.  
Link Belt Co.

## CLAYWORKING MOHY.

American Clay Mch. Co.  
Bartlett, C. O., & Snow Co.

## COAL CRUTES.

Interstate Mfg. Co.

## COLORINGS DRY AND MORTAR.

Samuel Cabot.  
Calvert Mortar Color Wks.  
Chattanooga Paint Co.  
Ricketson Mineral Paint Works.  
Williams, C. K., & Co.

## COMPRESSORS.

Allis-Chalmers Mfg. Co.  
Clayton Air Compressor Co.  
International Steam Pump Co.

## CONCRETE MIXERS.

Lakewood Engineering Co.  
Miscampbell, H.  
Power & Mining Mach. Co.

## CONCRETE REINFORCEMENT.

American Steel & Wire Co.

## CONSULTING GEOLOGISTS.

Hunt, Robt. W., & Co.

## CORNER BEADS.

North Western Expanded Metal Co.  
Sykes Metal Lath & Roofing Co.

## CRANES—LOCOMOTIVE AND GANTRY.

Browning Co., The.  
Cleveland Ry. Supply Co.  
Link Belt Co.  
McMyler-Interstate Co.  
Ohio Locomotive Crane Co.

## CONVEYORS AND ELEVATORS.

Allis-Chalmers Manufacturing Co.  
Atlas Car & Mfg. Co.  
Austin Mfg. Co.  
Bartlett, C. O., & Snow Co.  
Caldwell, H. W., & Sons Co.  
Chain Belt Co.  
Dull, Raymond W., & Co.  
Ehram, J. B., & Sons Mfg. Co.  
Hais Mfg. Co., Inc., Geo.  
Jeffrey Manufacturing Co.  
Link Belt Co.  
McMyler-Interstate Co.  
McLanahan Stone Machine Co.  
Manierre Eng. & Mach. Co.  
Power & Mining Mach. Co.  
Stephens-Adamsen Mfg. Co.  
Toepfer, W., & Sons.  
Webster Mfg. Company.  
Weller Mfg. Co.

## CRUSHERS AND PULVERIZERS.

Allis-Chalmers Manufacturing Co.  
American Pulverizer Co.  
Austin Mfg. Co.  
Bacon, Earl C.  
Bartlett, C. O., & Snow Co.  
Bonnot Co., The.  
Bradley Pulverizer Co.  
Butterworth & Lowe.  
Chalmers & Williams.  
Ehram, J. B., & Sons Mfg. Co.  
Grundler Pat. Crusher & Pulv. Co.  
Jeffrey Manufacturing Co.  
K-B. Pulverizer Co.  
Kent Mill Co.  
Lehigh Car, Wheel & Axle Co.  
Lewistown Foundry & Machine Co.  
McLanahan Stone Machine Co.  
Midland Crusher-Pulverizer Co.  
Pennsylvania Crusher Co.  
Power & Mining Mach. Co.  
Raymond Impact Pulverizer Co.  
Sturtevant Mill Co.  
Traylor Eng. & Mfg. Co.  
Webb City & Cartersville F. & M. Wks.  
Williams Pat. Crusher & Pulverizer Co.

## DRAIN TILE.

American Clay Co.  
Vigo-American Clay Co.

## DREDGES.

Osgood Co., The.

## DRILLS.

Loomis Machine Co.

## DRYERS.

American Process Co.  
Bartlett, C. O., & Snow Co.  
Link Belt Co.  
Ruggles-Coles Eng. Co.

## ENGINEERS.

American Process Co.  
Bacon, Earl C.  
Dull, Raymond W., & Co.  
Fuller Engineering Co.  
Hunt, Robt. W., & Co.  
Improved Equipment Co.  
Sauerman Bros.  
Schaffer Eng. & Equip. Co.  
Smith & Co., F. L.  
Stephens-Adamsen Mfg. Co.  
Traylor Eng. & Mfg. Co.  
Yates, P. K.

## ENGINES.

Allis-Chalmers Mfg. Co.  
Power & Mining Mach. Co.

## EXCAVATORS.

Cable Excavator Co.  
Raymond W. Dull Co.  
Hais Mfg. Co., Inc., Geo.  
Indianapolis Cable Excavator Co.  
Link Belt Co.  
McMyler-Interstate Co.  
Osgood Co., The.  
Sauerman Bros.  
Weller Mfg. Co.

## FIRE BRICK.

Carolina Portland Cement Co.  
Improved Equipment Co.  
Thornton Fire Brick Co.

## FLOOR HARDENER.

Ceresit Waterproofing Co.

## FURNACES FOR SPECIAL PURPOSES.

Improved Equipment Co.

## GAS PRODUCERS.

Improved Equipment Co.

## GATES.

Hais Mfg. Co., Inc., Geo.

## GEARS.

Caldwell, H. W., & Son Co.  
Chain Belt Co.  
Link Belt Co.  
Stephens-Adamsen Mfg. Co.  
Weller Mfg. Co.

## GLASS SAND MACHINERY.

Lewiston Fdy. & Mach. Co.

## GYPHUM BLOCK.

American Cement Plaster Co.  
U. S. Gypsum Co.  
Plymouth Gypsum Co.

## GYPHUM—PLASTER.

Best Bros. Keene's Cement Co.  
Cardiff Gypsum Co.  
Carolina Portland Cement Co.  
National Mortar & Supply Co.  
Ohio & Western Lime Co.  
Plymouth Gypsum Co.  
U. S. Gypsum Co.  
Wheeling Wall Plaster Co.

## HAIR.

Ohio & Western Lime Co.

## HOISTS, ELECTRIC AND STEAM.

Allis-Chalmers Mfg. Co.  
Link Belt Co.  
Hais Mfg. Co., Inc., Geo.

## HOLLOW CLAY TILE.

American Clay Co.  
Metropolitan Paving Brick Co.  
Vigo-American Clay Co.

## HYDRATING MOHY.

Atlas Car & Mfg. Co.  
Kritzer Co., The.  
Miscampbell, H.

## LIME.

Carolina P. C. Co.  
Kelley Island Lime & Trans. Co.  
Mitchell Lime Co.  
National Lime & Stone Co.  
National Mortar & Supply Co.  
Ohio & Western Lime Co., The.  
Owens & Son, John D.  
Scioto Lime & Stone Co.

## LIME, HYDRATED.

Kelley Island Lime & Transport Co.  
Mitchell Lime Co.  
National Lime & Stone Co.  
National Mortar & Supply Co.  
Ohio & Western Lime Co., The.  
Scioto Lime & Stone Co.

## LIME KILNS.

Atlas Car & Mfg. Co.  
Broomell, A. P.  
Improved Equipment Co.

## LOADERS AND UNLOADERS.

Amburns Company.  
Chain Belt Co.  
Hais Mfg. Co., Inc., Geo.  
Jeffrey Mfg. Co.  
Link Belt Co.  
Manierre Eng. & Mach. Co.  
Stephens-Adamsen Mfg. Co.  
Weller Mfg. Co.

## MANGANESE STEEL.

Allis-Chalmers Mfg. Co.  
Link Belt Co.

## METAL LATH.

Bostwick Steel Lath Co.  
Carolina Portland Cement Co.  
Sykes Metal Lath & Roofing Co.  
Trussed Concrete Steel Co.

## MOTOR TRUCKS.

Kiesel Motor Car Co.  
Pierce-Arrow Motor Car Co.

## PAINT AND COATINGS.

Cabot, Samuel.  
Calvert Mortar Color Wks.  
Ceresit Waterproofing Co.  
Chattanooga Paint Co.  
Gordon-Hittl Co.  
Ricketson Mineral Paint Co.  
Williams, C. K., & Co.

## PERFORATED METALS.

Allis-Chalmers Mfg. Co.  
Johnson & Chapman.  
Hendrick Mfg. Co.  
Toepfer, W., & Son.

## PLASTER.

See Gypsum.

## PLASTER BOARD.

American Cement Plaster Co.  
Plymouth Gypsum Co.  
U. S. Gypsum Co.

## PLASTER BOND.

Ceresit Waterproofing Co.

## PLASTER MOHY.

Butterworth & Lowe.  
Dunning, W. D.  
Ehram, J. B., & Sons Mfg. Co.  
Miscampbell, H.  
Williams Pat. Crusher & Pulverizer Co.

## POWDER.

Du Pont de Nemours Co., E. I.

## PREPARED ROOFING—SHINGLES.

Carolina Portland Cement Co.  
Reynolds Asphalt Shingle Co.

## PUMPS.

Allis-Chalmers Mfg. Co.  
International Steam Pump Co.

## QUARRY CARS.

See Cars.

## ROAD MACHINERY.

Austin Mfg. Co.  
Osgood Co., The.  
Troy Wagon Works.

## ROOFING-METAL.

Sykes Metal Lath & Roofing Co.

## SAND.

Union Sand & Material Co.

## SAND AND GRAVEL WASHING.

## PLANTS.

Dull & Co., Raymond W.  
Link Belt Co.  
Stephens-Adamsen Mfg. Co.  
Webster Mfg. Co.  
Weller Mfg. Co.

## SAND LIME BRICK MACHINERY.

Amer. Clay Machy. Co.

## SCALE CARS.

Atlas Car & Mfg. Co.

## SCREENS.

Allis-Chalmers Mfg. Co.  
American Pulverizer Co.  
Butterworth & Lowe.  
Chain Belt Co.  
Dull & Co., Raymond W.  
Ehram, J. B., & Sons Mfg. Co.  
Hais Mfg. Co., Inc., Geo.  
Hendricks Mfg. Co.  
Johnston & Chapman Co.  
Link Belt Co.  
McLanahan Stone Machine Co.  
Power & Mining Mach. Co.  
Stephens-Adamsen Mfg. Co.  
Sturtevant Mill Co.  
Toepfer, W., & Sons.  
Webster Mfg. Company.  
Weller Mfg. Co.

## SECOND-HAND MACHINERY.

Bourse.

## SEWER PIPE.

Plymouth Clay Products Co.

## SHEAVES, BLOCKS AND VALVES.

Hais Mfg. Co., Inc., Geo.

## SINK AND FLOAT TESTERS.

Pennsylvania Crusher Co.

## SPREADERS, ROAD.

Troy Wagon Wks. Co., The.

## STEAM SHOVEL.

Ball Engine Co.  
Osgood Co., The.  
The Automatic Shovel Co.

## STUCCO RETARDER.

National Retarder Co.

## TILES—RUBBER.

Goodrich, B. F., Co.

## TRAILERS, TRACTORS AND MOTOR TRUCKS.

Troy Wagon Wks. Co., The.

## TRAMWAYS.

Amburns Company.  
American Steel & Wire Co.  
Link Belt Co.

## TUBE MILLS.

Allis-Chalmers Manufacturing Co.  
Power & Mining Mach. Co.  
Smith & Co., F. L.

## WAGONS—DUMP AND REVERSIBLE.

Troy Wagon Wks. Co., The.

## WALL PLUGS AND TIES.

Sykes Metal Lath & Roofing Co.

## WATERPROOFING.

Cabot, Samuel, Inc.  
Carolina Portland Cement Co.  
General Fireproofing Co., The.  
Sandusky Portland Cement Co.

## WEIGHING MACHINES.

Schaffer Eng. & Equip. Co.  
Sturtevant Mill Co.

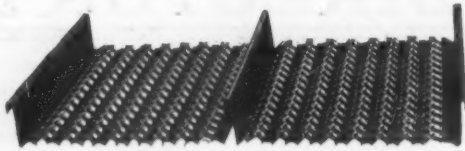
## WIRE AND WIRE FENCING.

American Steel & Wire Co.

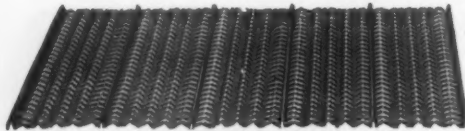
## WIRE ROPE.

American Steel & Wire Co.  
Leachman, A., & Sons Co.

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1 1/2" Hy-Rib—Very rigid. For heavy loads and wide spans



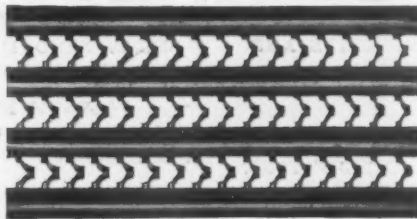
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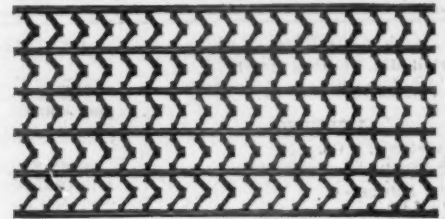
1 3/8" Hy-Rib—Widely used in partitions, sidings and ceilings



1 5/8" Hy-Rib for floors and roofs without forms—sidings, partitions, and ceilings without channels



Beaded Plate Rib Lath—Permits two-coat work instead of three



Standard Rib Lath in 3 gauges. Also "B" Rib Lath, similar in design

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**Hy-Rib** is furnished in four depths from 3/4" to 1 1/2" Hy-Rib, each in various gauges. Hy-Rib is a complete unit of reinforcement forms, lath and channels for roofs, floors, walls, partitions, ceilings, etc.

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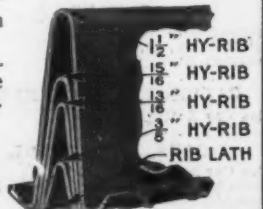
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Dept. H-26

Youngstown, Ohio

Representatives in Principal Cities



IT'S THE STRENGTH OF THE RIBS THAT COUNTS

# THE BELDEN BRICK CO.

Sales Offices:

Incorporated 1893

CANTON, OHIO



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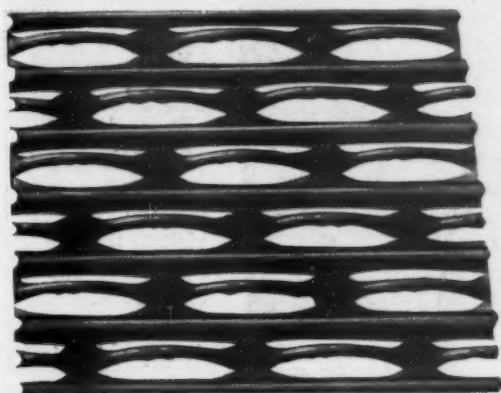
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## "Bostwick Truss-Loop" Metal Lath

that they can SAFELY space studding or joists 16" or 20" on centers instead of 12" and save some good sound American dollars in the cost of framing.

That the cost of the finished plaster surface is 15% lower than on other types of metal lath.

These facts, well presented, will increase the earnings of your Specialty Dep't notwithstanding the higher prices that prevail.

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## BRICK—The Old Way of Handling Them is a Nuisance

In tossing brick out of a car many are broken. A wheelbarrow doesn't carry enough bricks to warrant the time it takes to load, wheel it out and dump it.



### Use a CLEVELAND BRICK CLAMP It is the Newest and Quickest Way

Furthermore, in unloading brick it actually saves ONE-THIRD of the time over the old methods. This clamp is adjustable and will carry from FOUR to TWELVE bricks. There's no fuss or bother. Simply place the clamp down on the bricks and lift the handle.

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Metal Lath—surely! That's the true backbone of strength. But what kind of metal lath? It is well to remember that **weight** adds rigidity and durability; and that Sykes Expanded Cup Metal Lath, having **wider strands**, is much **heavier** than others cut from the same gauge. Judge metal lath by weight and gauge—not by gauge alone. Also remember that



## Expanded Cup Lath *Self Furring*

being fastened direct to sheathing boards or studding, requires no furring strips, and so saves you 5 to 10 cents a square yard.

Best for Interior Work as well as for Stucco Work.

A perfect key is assured by the expanded cup style. Sykes Metal Lath can't be applied wrong.

Approved by U. S. Government for Post Office work; indorsed by architects.

The Sykes Booklet—Complete Specifications for Stucco on Metal Lath—sent free on request—will show you how to save money. Let us send you this booklet and a Free Sample of Sykes Expanded Cup Metal Lath. Write us today—

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Finished in Excelsior Caen Stone Cement.  
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While in Cleveland investigate your possibilities for profit in handling

## Excelsior Caen Stone Cement

See the representative jobs in this city and vicinity finished in this material.

Then let us present our Dealer's Proposition.



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## IF you knew positively that

you could free yourself from further bag trouble, and all delays and waste of money, you certainly would take steps toward that end. The Bates System Valve Bagger with valve paper bags for sacking Cement, Lime, Plaster, Alca, Ground Stone, etc., will do the work you want automatically and accurately fill and weigh every sack. 150 tons per day of lime—one machine.

*Write for Particulars.*

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BRANCH FACTORY: NIAGARA FALLS, ONT., CAN.

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# CONCRETE

## Concrete Pipe Makers' Program.

A tentative program of the American Concrete Pipe Association has been drafted for its annual meeting to be held at the Auditorium hotel, Chicago, Feb. 17 and 18, as follows:

Thursday, Feb. 17, 2 p. m.—Registration; opening of the convention by the president, B. Blair, Woodstock, Ont.; appointment of committees; "Should Manufacturers Contract for Laying Their Pipe?" C. M. Wood, Chicago Portland Cement Co.; address, Edmund T. Perkins, Edmund T. Perkins Engineering Co., Chicago; "My Experiences in Starting a Plant," R. F. Whale, Waupaca, Wis.; "Some Experiences in Promoting the Sale of Concrete Pipe," Will A. Curless, manager, Thomas-Hammond Machinery Co., Tacoma, Wash.; 6:30 p. m., annual dinner at Auditorium hotel; entertainment will be furnished during the dinner, after which will be an address by Hon. A. O. Eberhart, ex-governor of Minnesota; there will also be informal talks by others.

Friday, Feb. 18, 9 a. m.—"Advantages of Big Tile Over Open Ditch," G. E. Warren, Universal Portland Cement Co.; "Possibilities for the Use of Cement Tile in the Mississippi Valley," C. H. Young, president, Central States Engineering Co., Muscatine, Ia.; "Recent Work of Committee C-6 of the American Society for Testing Materials," George P. Dieckmann, chief chemist, N. W. States Portland Cement Co.; "Concrete Pipe Sewer Work in Salt Lake City," N. L. Morris, manager, Utah Concrete Pipe Co.; Report of Reorganization Committee; 2 p. m.—"Meeting Objections to Concrete Tile," F. S. Phipps, Chicago; "Reinforced Concrete Pipe," L. M. Stallard, St. Joseph, Mo.; "The Selling End," L. W. Pierson, Cement Products Co., Spencer, Ia.; business session.

## Concrete Institute Program.

The annual convention of the American Concrete Institute will be held in Chicago on Feb. 14 to 17, inclusive, in order that the members present may have an opportunity to attend the Cement Show and some of the meetings of other organizations which will convene in that city during the same week. The Institute's directors desire to cooperate as completely as possible with those other societies which are specializing in concrete work and for this reason the program has not been definitely settled.

The sessions of the institute will be held in the morning and evening, and it is expected that joint sessions with other organizations will be arranged for some of the afternoons. The annual banquet will be held on the evening of Feb. 16.

In addition to important committee reports, the following papers have been definitely promised:

"The Construction of the New Concrete Viaducts on the Lackawanna Railroad," by C. W. Simpson.

"Tests of Large Size Concrete Slabs," by Earl B. Smith.

"Requirements of Building Codes for Columns and the Design of Columns," by P. P. Furber.

"The Design of Reinforced Concrete Buildings," by W. P. Anderson.

"Concrete Viaducts," by Frank Raschig.

"Concrete on the Massachusetts State Farm," by Maynard and Baker.

"Forms for Concrete," by Ralph A. Sherwin.

"Swimming Pools," by Edward D. Boyer.

"Tests Showing Continued Deformation under Constant Load," by Moore and Fuller.

"Pavements," by R. D. Stubbs.

"The Construction of the Toronto-Hamilton Highway by Day Labor," by H. S. Van Acyoe.

"The Construction of the DuPont Concrete Boulevard," by Charles Upham.

"The Essential Features for the Successful Construction of Concrete Highways," by William M. Acheson.

"Concrete Foundations for Heavy Traffic Street Pavements," by Clifford Richardson.

"How Shall a Rational Specification for Gravel Concrete be Developed," by Charles C. Brown.

"Tests of Sands for Concrete," by D. A. Abrams.

"The Nature of Portland Cement," by George A. Rankin.

"Tests of Concrete Materials at Cincinnati," by J. M. Braune.

"The Genesis of Reinforced Concrete Construction," by W. K. Hatt.

"Recent Tests of Reinforced Concrete Columns," by Burtis S. Brown.

"The Design of Plain and Reinforced Concrete Sewers," by W. W. Horner.

"The Manufacture and Use of Reinforced Concrete Pipe," by Coleman Meriwether.

"The Durability of Concrete Pipe," by J. H. Libberton.

"The Reinforced Concrete Water Tower at Middleboro, Mass.," by George Sampson.

"The Design and Construction of the New Dam and Reservoir at Austin, Tex.," by Lamar Lyndon.

"Methods of Construction at the Kensico Dam, Catskill Water Supply, New York City," by Wilson Fitch Smith.

"Concrete Conduits at Fall River, Mass.," by Frank H. Fay.

"Novel Methods of Concrete Construction on the New Subways in New York," by Ridgway and Goodwin.

"The Operation of the New York Workmen's Compensation Law to Date," by William C. Archer.

"An Interpretation of the New Standard Building Contract Documents," by H. L. Lowman.

In addition to these papers definitely promised, a large number have been conditionally promised.

## CONCRETE SILOS IN KANSAS.

A report recently made by J. C. Mohler, secretary of the Kansas State Board of Agriculture, shows that 10,000 silos, many of concrete construction, have been built on the farms of Kansas. Every county in the state has silos this year, while in 1914 four counties had none. The year's increase over the entire state is 36 per cent.

## NEW INCORPORATIONS.

The Spencer Cement Products Co. of Louisville, Ky., capital \$10,000; incorporators, B. F. Spencer, William McKee Duncan and A. Duncan, holding 60 shares of the 100 share issue. The debt limit is placed at \$10,000.

The Universal Concrete Construction Co., a new concern for the construction of concrete park and playground benches, is now in operation at Thirtieth and McAlpine streets, Kansas City, Kans. M. F. Rhodes is president of the company. Fifteen men are employed.

F. P. White has opened a new factory at Dane, Wis., for the manufacture of cement posts. During the first three weeks that his plant was in operation Mr. White received orders for 1,500 posts. All new equipment was installed in the plant.

## Yolo Basin Trestle Completed.

After about a year and a half of work the Graff Construction Co., of Seattle, Wash., has about completed the great concrete trestle over the Yolo Basin, between Davis and Sacramento, Cal. This is a part of the \$18,000,000 system of California state highways and cuts off some 35 miles from the wagon-road distance between Sacramento and San Francisco. The Yolo Basin has been used for years to receive the overflow from the Sacramento river, preventing the flooding of more valuable land adjoining, and is overflowed to a considerable depth most of the year.

The bridge, excluding a wooden trestle approach, is some 3 miles long. It is supported on concrete piles, at a height of about 30 ft. above low water, the piles being 35 to 60 ft. long, and 14 in. square in section, with a taper in the bottom to 5 ft. The piles, which were cast in the yard, were reinforced with four ¾-in. bars at corners, bound with a spiral of No. 6 black wire. Four piles were driven in each bent, the bents being about 19 ft. on centers; and the pile caps, completing the bents, were cast in place, the reinforcement of the piles being exposed and bent over to form part of the caps. The latter were 18 in. deep and 24 in. wide.

The trestle floor was made on the unit slab system, the slabs being cast and seasoned in the yard at Webster, near Davis, and laid later. The slabs are 4 ft. 6 in. wide, about 19 ft. long, to reach from bent to bent. Around the edges they are made 18 in. deep, a beam being formed 12 in. thicker than the main floor panels, which are 6 in. thick. These are carefully grouped with concrete, with special expansion joints at suitable intervals. This is said to be the first use of this system of floor construction on a large scale in California. For the past year the work has kept a number of material plants in that vicinity occupied. The state highway commission, which had charge of the construction, furnished the cement, reinforcing, sand and gravel and other materials.

## 1915 Best Building Year for Chicago.

The past year marks the best within the history of Chicago for building operations, except that of 1911, according to Peter Holy, secretary of the Building Commission. In that year permits were issued for a large number of downtown steel structures, on account of a change in height of that class of buildings, which became effective on Sept. 1 of that year. It was that feature alone that was responsible for permits having been issued for \$25,000,000 worth of buildings that would otherwise have not been taken out at that time, while for the present year permits have been issued on a basis of a revised ordinance that has been in effect since the year 1911. Present indications point forward to continued active building operations for the year 1916.

During the year there were 10,339 permits issued for the construction of buildings at an approximate cost of \$97,289,680. This was an increase of 401 permits and \$14,027,970. The figures for the two years, by months, are as follows:

Month.	1914.		1915.	
	Permits.	Cost.	Permits.	Cost.
January	523	\$ 4,784,300	476	\$ 4,327,900
February	455	5,097,900	579	4,701,500
March	1,170	8,111,150	1,096	7,403,750
April	1,099	9,465,400	754	6,820,700
May	773	6,919,150	786	7,902,900
June	1,054	9,538,300	857	7,613,500
July	1,100	9,148,760	830	6,455,630
August	754	5,769,450	905	5,513,150
September	709	4,925,900	977	8,569,600
October	824	6,774,200	1,111	12,479,250
November	840	6,513,150	1,166	10,861,600
December	632	6,214,050	712	10,640,200
Total	9,938	\$83,261,710	10,339	\$97,289,680

The Ohio Cement Silo Co., Wauseon, Ohio; capital, \$20,000; incorporators, Frank S. Ham, Charles T. Stahl, W. C. Fink, J. K. Campbell, C. E. Rossman.



# CEMENT

## Arrangements Completed for New Southern Mill

Preliminary arrangements for the installation of the new 2,000-barrel Portland Cement plant near Foreman, Ark., have been completed by the officers of the Consumers Portland Cement Co., which has opened offices at 1405 Lumber Exchange building, Chicago. The company has been incorporated with a capital of \$2,000,000, representing 200,000 shares of \$10 each.

It is the purpose of the company to erect, equip and operate upon its property the most modern and up-to-date cement plant possible to build.

It is also the purpose of the company at some future time to operate in connection therewith a modern hydrated lime and fertilizer lime plant. All buildings will be fire-proof, thereby assuring the lowest insurance rate. All machinery will be electrically driven.

This will avoid shut downs, as each machine or its unit will be driven by its own motor. Everything that will lead to the most economic production will be used. The plant will have a daily capacity of 2,000 barrels.

The site of the proposed plant is situated in the very heart of the productive region of the southwest, in Little River county, Arkansas, adjacent to the town of Foreman on the St. Louis & San Francisco Railroad that connects with the Kansas City Southern Railroad at Ashdown, the county seat, sixteen miles distant to the east, with the St. Louis-Iron Mountain Railroad at Hope, which connects with several other trunk lines at Texarkana, Ark., and Texas. It is only a short distance from Red River, where a stream bargeable the year around, opens up an unlimited territory around New Orleans.

There is no cement plant in the great portion of Eastern Texas, none in Western Tennessee, none in Western Alabama and none in the entire states of Arkansas, Louisiana and Mississippi. The estimated population within the above territory is about 7,000,000 people.

The directors and officers of the Consumers Portland Cement Co. are all well known and thorough business men who have made a success of their various lines, men whose integrity is beyond reproach and who court the most thorough investigation of their proposition.

Albert Graff, president, is also the head of the Graff Concrete Construction Co., and has been a large purchaser of Portland cement for his own use. He has an enviable record as a concrete worker. The board of directors consists of F. Hotz, vice president, Dr. E. S. Bell, treasurer, and D. D. Johnston, secretary.

Albert Graff, president, Albert Graff Concrete Construction Co.

Edgar S. Bell, physician and surgeon.

Dilno D. Johnston, secretary.

S. Crohn, president, Greek-American Sponge Co.

J. F. Southard.

C. B. Aydelotte, real estate.

Rudolph Schenck, Peoples Gas Light and Coke Co.

C. E. Oxford.

Ferdinand Hotz, wholesale jeweler.

The new plant of the company will be located about a mile from the town of Foreman, Ark., and will be built by the Fuller Engineering Co., Allentown, Pa.

The materials which are to be used at this plant are rather soft chalky limestone and clay, both of which are obtained at the plant site. Coal will be used as fuel both for power purposes as well as for burning in the kilns, and will be obtained either from Oklahoma or in Arkansas.

The limestone will be quarried and handled by a large steam shovel, which will load quarry cars of the tilting type, which cars will be hauled directly over a large roll crusher. The clay will be quarried south of the plant site and will be brought in by means of tram cars and will discharge directly into a special type clay disintegrator.

The cars loaded with limestone as they come from the quarry will discharge directly into a large



ALBERT GRAFF, PRESIDENT CONSUMERS' PORTLAND CEMENT CO.

roll crusher, which crusher will have a large receiving opening sufficient to take care of steam shovel product.

Following this large roll crusher will be two smaller roll crushers, the discharge from which will go directly into an elevator discharging into feeding hoppers of two limestone driers in the preliminary drier department.

The clay passing through special type of clay disintegrator will discharge directly into inclined conveyor leading directly to the clay drier in the preliminary drying department.

In the preliminary drying department there will be three rotary driers, two for limestone and one for clay. The discharge from these driers will go directly to elevators, elevating the material and discharging same onto conveyors leading directly to the stone and clay storage, which will be amply large.

The limestone and clay will be discharged directly into storage and will be rehandled by an electric crane with grab bucket to the final driers in the drying and mixing department. In this department

there will be two large driers, one for final drying of limestone, and one for final drying of clay. Located between the driers in this department will be a large mixing bin of steel of ample capacity. Below this large mixing bin will be an electrically operated trolley weigh scale car.

The raw materials being drawn from the bins above in the proper proportions, the car will then move to a hopper receiving the mixed raw materials where it will be fed to an elevator discharging onto a conveyor leading to the raw department, which will contain seven of the latest type Fuller-Lehigh pulverizers, each driven by an individual vertical motor.

The pulverizers will all discharge into a common screw conveyor leading directly to an elevator, elevating the pulverized raw material and discharging into a conveyor leading to the stock bins above kilns in the kiln department.

There will be installed in the kiln building two nine by 175 foot rotary kilns complete with stacks. Each kiln will be driven by an individual variable speed motor.

Below the kilns will be installed two rotary clinker coolers. Directly below discharge end of coolers will be installed automatic weighing machines for weighing the daily product from the kilns. Directly in front of kilns will be a pulverized coal equipment, consisting of pulverized coal storage bin of large capacity with variable feed control and separate motor driven fan so that regulation of both air and coal going to the kilns is obtained.

Clinkers passing through weighing machines will discharge directly onto conveyor leading to an elevator discharging onto conveyor distributing the clinker in the clinker storage department, which will be of sufficient capacity. Tunnels will be directly below clinker storage, through which clinkers will be handled directly to the clinker mill.

Gypsum storage will be located at the end of clinker mill where proper amounts of gypsum will be added to the clinker coming from the storage. The clinkers will then be elevated to the bins above pulverizers. The clinker mill will contain five of the latest type Fuller-Lehigh pulverizers, with individual vertical motor drives.

The cement discharging from the pulverizers will go to a common screw conveyor leading to an elevator discharging onto a conveyor which will distribute the cement into the stock house which will be of large capacity.

An equipment of modern packing machines will be so installed that the amount of trucking will be reduced to a minimum. Directly across from the packing house will be located a modern bag house where the bags as they are received will be properly cleaned, repaired and counted.

Coal as it is received at the plant will be discharged below a trestle. Beneath this trestle will be a tunnel with a conveyor for carrying the coal directly to the coal mill. The coal being brought in from the tunnel will pass through a set of crushing rolls for making proper size feed for the pulverizers. The coal will then be dried through an indirect fired coal drier of the latest type. In the coal mill there will be two 42-inch Fuller-Lehigh pulverizer mills, with individual vertical motor drives.

The power for the plant will be obtained from a modern power house equipped with water tube boilers of the latest approved type with superheater and automatic stokers.

There will also be installed three turbo genera-

tor sets with jet condensers, all the necessary heaters, circulating pumps, exciters, switchboard and wiring, a complete coal and ash handling system and an air compressor. In connection with the power plant there will be installed a machine and blacksmith shop, fully equipped, for making general repairs. There will be a pump house properly located for the water supply.

The buildings for the cement mill will be constructed of steel framing, covered with corrugated siding and roofing. The plant will be electrically driven throughout with individual electric motors, and the equipment will be standardized so that a large amount of the equipment will be interchangeable.

There will be no clutches or line shafting, but only one or two countershafts in the entire installation, thereby reducing the power and operating expense to a minimum.

This plant will have installed as mentioned, large single stage reduction machines of the Fuller-Lehigh type, thereby eliminating multiplicity of operations, and reducing the number of moving parts to a minimum.

Large storage bins will be installed throughout the mill, giving uniform operation at all times and making output independent.

A mill office of proper design will be constructed containing full laboratory equipment. There will also be a properly designed store house, powder house and oil house.

This mill when completed will have incorporated the latest and most up-to-date methods of manufacturing cement, so that the quality of the product will be under absolute control at all times. The location of the plant affords excellent shipping facilities into the southwestern district.

### A Most Confident Outlook.

The new year opens with the industry as a whole better balanced and more securely planted in the position to reap profits from its commercial activities than it ever was before. The consistent and pronounced rally during the last half of 1915 has been carried over into January without any indication of the customary stampede that often upsets the triumphal car of prosperity.

There is every indication and every argument for maintaining this good condition, for when the demand for cement shows every sign and promises to steadily improve just as soon as actual activities begin, it is no time for anybody to rock the boat with impatience or destructive competition.

The war in Europe has shown us that Cossack forages are no longer effective against modern military strategy, and the same thing is true of present business tactics where able and alert men are watching every move upon the chess-board of business. Again the present condition of all the belligerents, as great and powerful as some of them are, too plainly demonstrates that fighting costs more than it is worth in glory, while no one is inclined to court inevitable heavy financial losses.

The lesson of 1915 has demonstrated that the American cement industry could and did rally right in the midst of a season in which the demand was off between 25 to 30 per cent, and has borne up consistently for months under the same conditions. Now there is every reason for confidence in the belief that the present status and levels of cement will be maintained until heavy spring movements begin. This kind of confidence is widespread and quite the expected thing, for full consent and co-operation of dealer consumers is evinced on every hand.

Early heavy winter weather indicates an early spring as the eternal natural balance of things provides, which is another propitious sign. In general business conditions there is a growing confidence in the future that is bound to be reflected in activities that will soon send building back to normal, and the long neglected permanent improve-

ments of the railroads has got to materialize this year in tremendous volume. The roads have got more money than they ever had and the pressing need of repairs, improvements and extension of facilities and equipment was never so insistent as it is at the present time, with all their principal terminals literally blocked with traffic of the high earning varieties.

A new vista is opened for export cement from American ports as never has existed till now. This outlet is only limited by carrying bottoms at the present time, or possibly more correctly by the measure of interference by the navies of two of the most prominent belligerents. The last named obstacle will be very promptly wiped out by the Congress, which has already taken up the matter, and then it will be astonishing how many boats will show up in our ports offering tonnage. Beside such craft as represent the first-class lines of modern merchantmen, there is an enormous number of good ships of obsolete patterns that can carry a whole lot of stuff. Anyway the details of the case break, there will be a very big outlet found for export cement which is all new business to us.

Beginning right where we left off in November the demand of 1916 will pick up day by day till full capacity of all the mills is reached by or before midsummer. This is the best guess that can be formulated, and such condition will surely be brought to pass if it is fairly anticipated and lived up to now and until movements begin. With unbounded confidence we congratulate all the factors whilst wishing to each and every one a prosperous new year.

### Death of L. V. Clark, Jr.

Ludlow V. Clark, Jr., second vice-president of the Lawrence Portland Cement Co., died Dec. 28 at his residence, 157 Pelham Road, Germantown, Philadelphia, Pa., after a long illness of a complication of diseases. Mr. Clark was born in New York state fifty-two years ago and has been connected with the cement business in Philadelphia for nearly thirty years, or since he attained his majority. Mr. Clark was a man of unusual attainments and of an exceptionally attractive personality. He was an extensive traveler and a student of economical and industrious conditions.

In speaking of his former sales manager, Ernest R. Ackerman, president of the Lawrence Portland Cement Co., said: "Mr. Clark was that stripe of individual that compels respect and confidence. He was a river of harmony, critical, perhaps, when business required fine judgment and delicate action. Precise as to detail, but broad in dealing with subjects as a whole. His ability was such as to brook no questioning. In his demise our organization has suffered the loss of a good man."

Mr. Clark is survived by his widow and one daughter. He was a member of the Union League Club of Philadelphia, a Mason of high degree and a noble of the Mystic Shrine. The funeral was held on Friday, Dec. 31, at Philadelphia. The New York and Philadelphia office forces of the Lawrence Portland Cement Co. attended the services in a body and formed an aisle from the doorway to the hearse through which the remains of their comrade was carried.

### GAIN IN CEMENT SHIPMENTS.

New York, Jan. 3.—ROCK PRODUCTS AND BUILDING MATERIALS is able to report a gain of 500,000 barrels of Portland cement shipments out of zones 1 and 2 of the Lehigh and Hudson manufacturing districts for the year 1915 over those covering the twelve months in 1914. Last year the total shipments out of these two districts totaled 30,000,000 barrels as against 29,500,000 barrels in 1914. The stock on hand in finished cement is about 10 per cent below that at this time last year.

### In the Operating Department.

Considerable improvements have been made at the plant of the Newago Portland Cement Co. Two new kilns have just been installed, storage silos for raw material and clinker, and new cement storage and bag houses have been built. The remodeling has been done under the watchful eye of General Superintendent J. B. Johns, who by this method believes he has decreased the manufacturing cost. As demonstration of Mr. John's ability in cutting down overhead and other operating expenses, it might be said that since he has been on the job, The Newago Portland Cement Co. has paid dividends.

F. L. Jorgensen has left the Sandusky Portland Cement Co. and is about to hang out his shingle as an engineer.

U. S. Hannum, has resigned as superintendent of the Bonner Portland Cement Co., Bonner Springs, Kans. Henry McGraw, general manager, will operate and manage the plant in the future.

The Diamond Portland Cement Co., Middle Branch, Ohio, is installing two ten by 150 foot kilns to replace smaller kilns. M. Maythum, former chief engineer of the Cowham Engineering Co., Jackson, Mich., has been retained as consulting engineer on these new installations.

The San Francisco representative of the Williams Patent Crusher & Pulverizer Co. has just sold a No. 7 "Jumbo" limestone crusher to the Southwestern Portland Cement Co., of Los Angeles, Cal. This machine will take six-inch stone and reduce it to about one and one-half inches and finer for the dryers in the raw end of the cement plant. It will have a capacity of about 250 tons per hour. The Williams company has now in successful operation over twenty machines of this type in various plants throughout the country.

The Monarch Portland Cement Co., Humboldt, Kan., will hereafter use pulverized coal for kiln fuel in place of fuel oil. The firm is now putting in a new coal house, coal storage and coal handling equipment. There is also being installed a number of tube mills on both raw and finishing sides. The tube mills will take the feed from the company's present Bonnot mills which will not be used as preliminaries to the new tube mills. These changes will increase the daily output of the company to 5,000 barrels.

The Western States Portland Cement Co., of Independence, Kan., is installing three Fuller mills.

### LEHIGH MEN HEAD VIRGINIA COMPANY.

The Virginia Portland Cement Co. announces the retirement of R. W. Kelley, president, Michael Gavin, vice-president, and F. W. White, treasurer, from their respective offices, and the election of Harry C. Trexler, president, E. M. Young, vice-president, and Alonzo F. Walter, treasurer.

The main offices of the Virginia Portland Cement Co. will be in the Young Building, Allentown, Pa.

Effective Jan. 1, the William G. Hartranft Co. discontinues the sale and distribution of "Old Dominion" Portland cement and the Virginia Portland Cement Co. itself will hereafter sell and distribute its product direct to its customers under the supervision of B. L. Swett, sales manager.

### NATURAL CEMENT PRICE ADVANCED.

New York, Dec. 23.—The Consolidated Rosendale Natural Cement Co., today advanced the price of its "Brooklyn Bridge" brand of natural cement from ninety cents to \$1.00 a barrel. Improving demand, higher cost of production and the prospects of a big building movement next year were reasons ascribed for the advance by William C. Morton, general sales manager of the company.



# With the QUARRIES

## The Development of Crushed Rock Operations

Out of the clash and din of battle the greatest lessons of civilization have ever been taught, and the fiercest conflict of history now raging is no exception. Just two words can express the main physical lesson of the war in Europe. They are familiar words to all of us—Good Roads.

Good Roads constitute just fifty per cent of the value contained in the complex equation of preparedness which is now so widely discussed in all of its members and factors, its high lights and shadows. In peace and in war this greatest factor of preparedness is equally important, equally essential and altogether indispensable to further progress. In peace, good roads constitute the main permanent essential of economy, as the initial link between the products of the earth and consuming humanity, reaching back to the point of origin in every case. By increasing the efficiency of transportation, however, it may be expressed it reduces the first cost of every necessity and so increases the buying power of the consumer, which is independently wealth itself. In time of war the same efficiency is contributed by good roads to the movement of armies, munitions, supplies and the heavy modern equipment so indispensable to success, multiplying the value of armament, and at the same time conserving the power of manhood in the ranks. And good roads make wider areas of cultivated resources promptly available to concentration for the support of armies and civilians alike.

These features of our good roads movement are not prominently discussed in connection with army and navy programs in the President's message or in the halls of Congress because it takes so many words to express the details of squadrons of battle ships, flotillas of submarines, flocks of aeroplanes, divisions of army corps and coast defense paraphernalia; but nevertheless in all of these contained as the principal single ingredient good roads are always present, always quite indispensable to every great effort of humanity and civilization, defensive and offensive alike. Few of the leading statesmen of the times, since they gravitate to and are surrounded by urban conditions, yet realize the full value and importance of good roads, and the insistent necessity of promptly increasing the mileage to at least ten times that in existence at the present time.

### Federal Aid and State Aid.

It makes no difference whether the practical assistance extended by the Federal Government comes under the provision, for improvement of post roads in connection with the Post Office Department, or whether new laws are provided under which the War Department can assist in a definite plan for increasing the road mileage distinctly for military purposes. Probably it would be better for the sake of quick action to proceed under authorities of law already provided than to wait for future enactments. Increased mileage of good roads is needed strong enough by the Post Office Department to influence very liberal federal assistance, and all such roads, however built and improved, will be equally available for military use, to say nothing of the constant benefit that all people derive in times of peace, which is truly worth all of the cost.

State aid systematically directed and applied to



ONE OF THE LATEST BIG CRUSHER PLANT YARDS NEAR CHICAGO NEARING COMPLETION.

the improvement of roads by so many of the richest and most prosperous commonwealths, can well be materially increased, for the reason that in those states where state aid to road improvement has been most liberally extended, the direct returns are more than paying the cost—faster than interest expenses grow. The indirect returns are in fact immeasurable, because the good roads contribute so many unexpected values which become recognized from time to time as the developments of civilization occur and ripen into facts.

### Origin and Development of Road Laws.

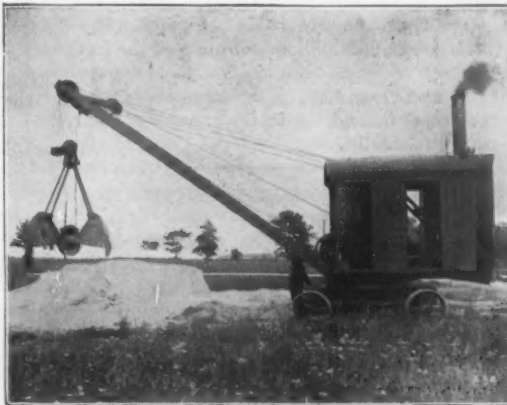
The road laws as we have them for the most part have been built up from the foundation of valuation on farming lands. This was the primary condition surrounding the settlement of the recent

vast vacant areas which have been peopled and organized into empires like magic in less than a century of time. At first there was no value to landed possessions, and the road improvements more than anything else created the first recognizable valuation, and so the propriety of taxing the land to be benefited by road improvement was recognized and became the general plan of procedure. Thus we have the county and the township road authorities provided for the purpose of deciding upon the location and the extent of local road improvements in all parts of the country.

This very condition is the main problem that now confronts all of our good roads movements. The township trustees, with the rural land owners influencing them, constitute the court of last resort in nearly every road improvement project.

### The Automobile Influence.

Very wide distribution of ownership of automobiles during recent years has had a big influence in changing the farmer vote to favor local road improvements, but the resistance to increased taxation is always present, and increase the number of progressives who can by this route be won over so as to create a majority generally will take many years. Yet the increase of mileage that has been prominently assisted by the automobile influence in several of the older states is very much appreciated, and without doubt is destined to continue as an influencing factor of increasing value. More recently has come along for recognition the yet unmeasured value of the motor truck. This already promises to very soon eclipse all of the achievements of the pleasure or touring car by its direct bearing upon commercializing rural freight transportation. This new influence is already enormous,



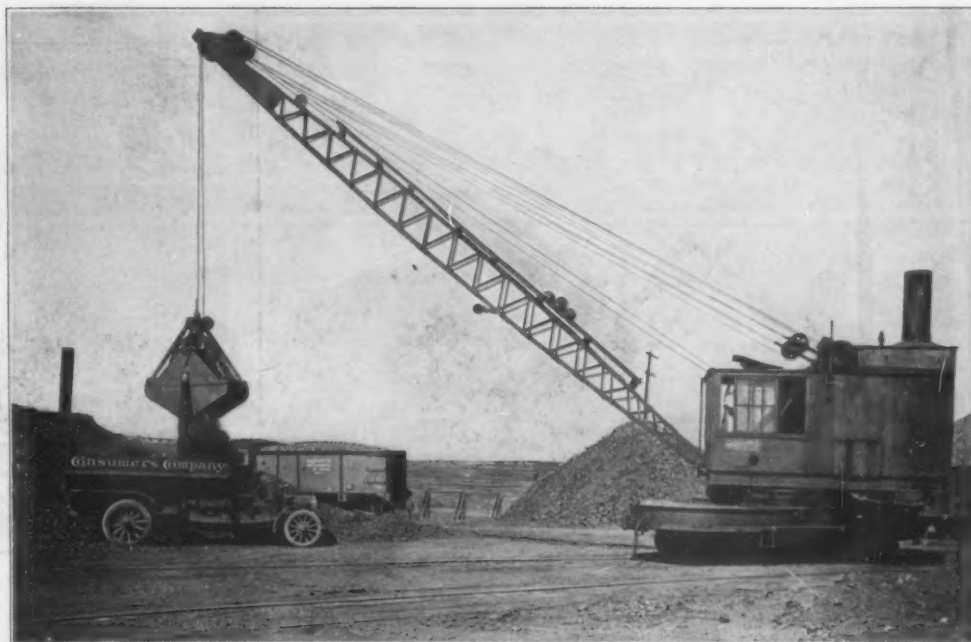
TRACTOR AND CLAM SHELL FOR ALL-AROUND REQUIREMENTS.

and it at once brings about a distinct change in the basic understanding of the contributing sources from which road improvements may be drawn. The value to the land owner has been increased thereby, but the commercial value of the road has been tremendously increased with regard to the cities, towns and villages that are connected by improved roads. These concentrated corporate bodies of the population have heretofore been but slightly interested in road improvement, but now it is recognized that their financial interest has become quite as great if not greater indeed than that of the rural land owner whose property is reached by the road improvement itself. In many cases incorporated towns could so well afford the cost that they would be willing to pay the entire cost of some road improvements, if township trustees would give them the right of way and a square deal.

The old methods that have hung around the road improvement idea for the past fifty years are still the hardest nut to crack and the most difficult obstacle to overcome in the matter of getting an increase of appropriations of money for increased mileage. It has been hard, indeed, and next to impossible, to codify and untangle the various road laws that have been adopted from time to time as expediency dictated, and out of the whole study formulate an intelligent plan of procedure which will result in securing the needed ten-fold increase of good road mileage in the shortest possible time.

#### A Plan of Procedure Suggested.

It has been recommended that a careful and competent survey of the needed mileage be studied by a well equipped committee to independently draw up a good roads program that shall be in line with the present and known future demand of road requirements. After this is completed and carefully checked, the same commission to carefully analyze and distribute the valuation upon a liberal estimate of cost of construction, and so create a road system for the whole country that will attract the acceptance and support of a definite and practical nationwide system. When this is known to be perfect by exhaustive checking and counter-checking, provide a sweeping bill for the repeal of all existing road legislation, and substituting therefor the new and



LOADING TRUCKS FROM STORAGE AND FROM CARS TO STORAGE.

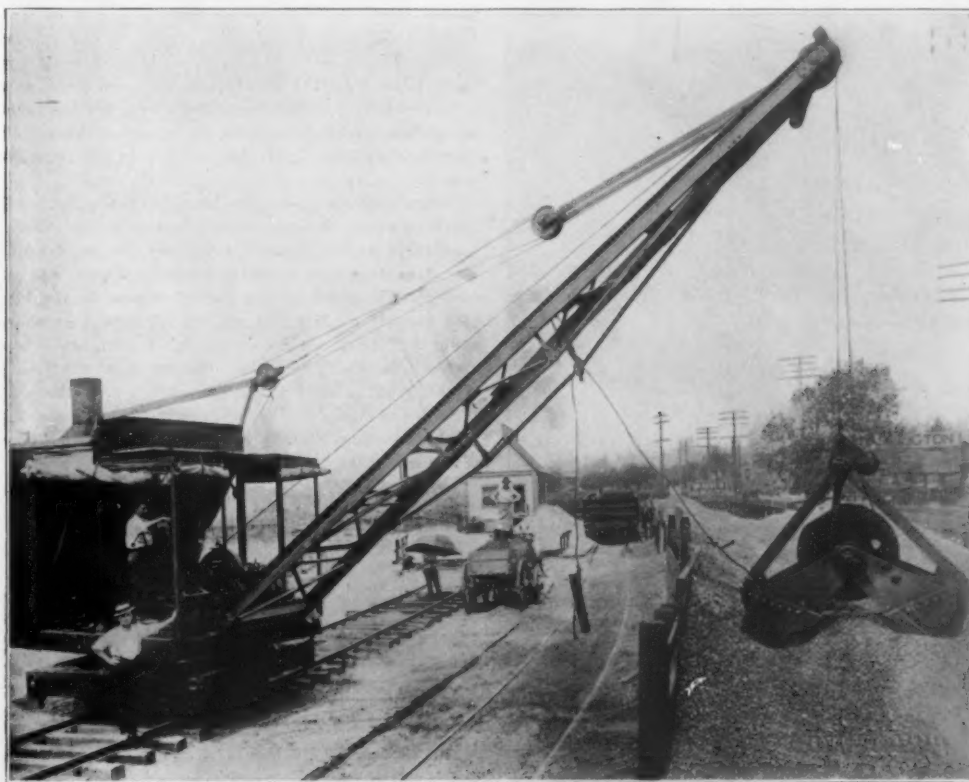
perfect system which will at once wipe out the inefficiency, the distraction and the unconscionable cost that always result from ignorance and poor judgment of purely locally interested individual officials. But this is so radical and presupposes such a wide range of knowledge that it is generally considered as visionary and impractical, because the important pioneer work of assembling and classifying the information would have to be done by very able and consequently high priced men without pay. No such type of American ability has been observed since the disappearance of the first crop of real constructive statesmen, about the middle of the nineteenth century, to whom the dollar was not so attractive as it has been to our citizenship ever since.

The best lead that we have before us is the

economic developments that are coming out of the wonderful increase in the use of the motor truck. It is big enough to draw out the voluntary co-operation and assistance of the interested factors in road improvements who are not at present legally included therein. Ever greater progress is being made by the slow processes of legislation to improve and shorten the path by which road work can be financed, and the disposition of public policy is slowly learning to appreciate the small beginnings of the importance attached to road improvements in the safety and progress of our future developments.

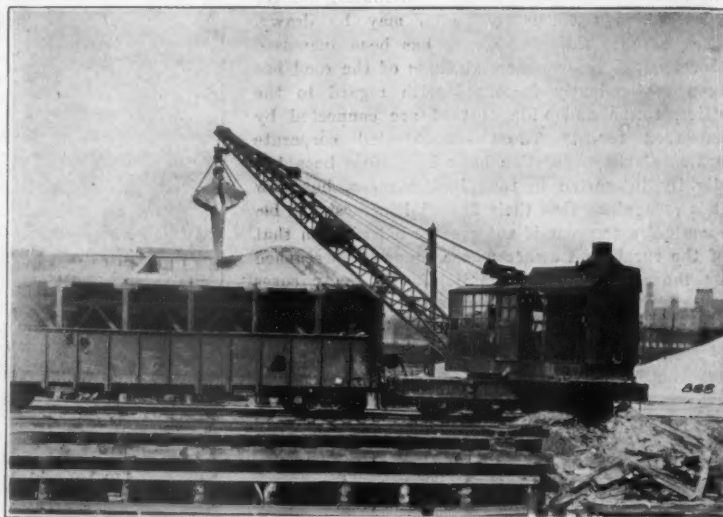
#### Great Improvements in Road Methods.

In the issues of ROCK PRODUCTS AND BUILDING MATERIALS during the past year has been discussed in detail many of the economic developments of actual road work and the economical features of modern equipment for producing and handling the immense tonnage of material that is always the principal feature in road construction. It is well within the circle of recollection of the active men of today when road construction was carried on not as a business at all, but as a disorganized community effort to secure a needed improvement. The armies of farmer boys that used to swarm out upon the staked-out highways upon designated days to do road work, we recall as the jolliest occasions of boyhood days. Several months before the county engineer, with a transit instrument and a couple of rod-men, had put down the stakes, and advertised in the Semi-weekly Gazette three consecutive times that all the able bodied males between the ages of fifteen and forty-five years were summoned for three or five consecutive days, as the case might be, to work on the designated road. All abutting property owners having fifty rods or more of land fronting upon the highway being notified in the same advertisement to furnish one two-horse wagon team and driver. Some of the boys brought picks, shovels or spades, others brought hoes, rakes and occasionally there was a sledge, and a plow, the latter being mainly used for lining out the ditches. Niggers were never allowed to do road work, because it was somewhat of a society affair. Everybody knocked off at noon when the girls brought the dinner pails, and usually the dinners were too heavy to allow for much work in the afternoon. Then somebody was sure to bring a banjo, and the sylvan summertime was entirely too attractive to allow very many of those road hands to obey the mandate of the County



LIGHT CRANE AND BUCKET LOADING WAGONS FROM STORAGE.





RECEIVING AND LOADING DOCK OF THE CLEVELAND MACADAM CO., CLEVELAND, O.

Judge without compensation. It was public business, everybody's business, which is ever nobody's.

A good many of the foundations of present much traveled roads were started with this kind of work, but that is long past with the conditions that made it possible, and all of the good roads that have ever been built have been constructed by proceeding with the work upon a business basis. This picture of the first attempts at road improvement was followed by that of the contractors, who came with a small army of hired men with carts and hand tools to literally dig out the grades and shovel in the fills by hand and to spread the broken rock by mule drawn carts. It was a great improvement, but could only last while there was a plentiful supply of cheap manual labor eager for employment.

#### The Rock Crusher a Revelation.

Such a procedure would be impossible at the present time. Modern road work is conducted almost entirely by machinery. The number of men em-

ployed in a modern road gang would not amount to as many as the section bosses and timekeepers of the old regime. The first essential to make modern road construction a physical possibility has been the development of the quarry and the rock crushing plant. In no line of industry, perhaps, has there been such marked changes and such radical improvements within the past fifteen years as that of producing crushed rock.

Having been intimately acquainted with and connected to the industry in all of this period the editors of ROCK PRODUCTS AND BUILDING MATERIALS are in a position to recall each of the improvements that have revolutionized former ideas as to the capacity and the cost of handling and transportation of crushed rock, which is the principal road building material everywhere. Fifteen years ago the quarry floors were peopled by a large number of men who used the hand ball-drill to put down holes for blasting with black powder, for dynamite was just beginning to be considered universally as

a quarry supply. There was a great deal of superstition about "jelly powder" at first.

The big steam shovels which have displaced seventy-five per cent of the hand labor in the quarry pit have only been generally introduced within eight or ten years. True, there were one or two shovels giving a good account of themselves previous to that time, but as an indispensable item of quarry equipment they have only come comparatively thus recently, and some of the first steam shovels that were ever put into quarry pits are still working steadily in a hole that is constantly growing bigger and deeper as the years roll on. Such ponderous and heavy duty machines have been supplied with new teeth from time to time, and other wearing parts have been replaced as occasion required, but the steam shovel in quarry practice has made good to such an extent that all the men of experience who have made quarry operations pay, without a single exception, give the steam shovel unqualified endorsement.

The labor situation of quarry operations has adjusted itself in such a way that it would be impossible today to supply the tippie of the larger crusher plants with a supply of blasted rock by hand labor. In the first place the men could not be secured, and modern capacity would require such a number of hand workers as to make them fall over one another in trying to get to the quarry cars.

Steam shovels promptly brought the output of crushers up to the maximum. It was a thing long considered to be impossible to bury the head of a No. 6 crusher and keep it buried. There was a current expression amongst crusher men to the effect that if all the lost motion of such a crusher could be taken up by improved feeding and increased supply from the quarry face that the crushing millennium would be reached once for all. It took the steam shovel just about one good season to demonstrate that it was easy enough to keep that crusher head burned and then some.

#### Bigger and More Perfect Crushers.

So the size of the initial crusher had to be increased to take up the lost motion of the steam shovel. Engineers and rock crushing experts undertook the task of remodeling and improving the old patterns of crushers so as to increase the size and so secure greater output at the initial operation. A bigger shovel again demanded a still larger crusher until a natural balance between first cost and desired efficiency was worked out. No. 8, No. 9 and No. 10 crushers are now the minimum initial units used by the very men who considered the No. 6 plenty big enough for all practical purposes ten years ago. A few No. 48's and one or



LOADING CARS FROM A BARGE AT 1½ CENTS PER TON.



A MODERN CRUSHED ROCK STORAGE SYSTEM.

two even larger than that have been built and are operated successfully, but such initial breakers call for several shovels to keep them fed, along with such an enormous investment of auxiliary transportation and conveying equipment as to make very few markets capable of consuming their tremendous outputs. Mammoth rolls and disc crushers have been introduced for special installations, and fine grinders and pulverizers of roll, ring and hammer types have been perfected so as to provide a range of product that is limited only by the requirements of the user.

The tonnage of the crusher plant specialties is constantly growing. The end of this development is not in sight by any means as yet, but for the most part there is a misunderstanding about the selling price of the very fine product. Looked upon as a by-product, the tendency seems to be that any revenue so secured is a distinct addition to the profit account, and the result is that nearly all of the very fine product of crushing plants is sold for less than half of the sum it would cost to produce it independently. This practice amounts to absolutely throwing away a distinct asset development of the rock crushing operation, for no other apparent reason except that it is new and appears to be a demand of small proportions. This is but another mistake, for the time is not far distant when present plentiful supplies of agricultural material alone will be found inadequate, and the cost of producing goods for that purpose will be demonstrated at much higher prices.

#### Staple Character of Crusher Product.

Concrete aggregate materials are always the principal corollary of the great staple products of railroad ballast, iron furnace flux and road material, none of which can ever be supplied adequately within the lifetime of the present generation, although occasional interruptions of appropriations or the details of consumption will cause temporary dullness of demand from time to time.

#### Railroad Dominates No Longer.

For a very long time the railroads were the determining factor of success in the crusher business, to lose a ballast contract was universally considered as fatal and final in years gone by, and every arrangement and contrivance was developed for the accommodations of railroad transportation, except in such plants as had the advantages of water transportation, and consequently were never particularly beholden to railroads. The large, low-priced tonnage has long been considered as exclusively and distinctly a railroad proposition, and so it is and must remain in many cases at least. Bin capacity raised over loading tracks was the method first suggested by railroad practice to economize the use of rolling stock. Since bin capacity limited the operation of a crusher plant, unless the bins are regularly relieved of their loads the operation automatically comes to a standstill with full bins. So the operation was always at the mercy of the railroad for supplying rolling stock and switching service. All of this was doubtless very

pleasant for the railroad management, as it was usually in a position to use the few carloads of material that could accumulate in any set of bins, however large they might be, and the physical limitations of bin capacity does not constitute a very large amount of product comparatively speaking. The limit has always been that of judicious investment of money as related to economy of handling the screened and separated crushed rock in the various sizes wanted.

#### Locomotive Cranes and Mechanical Hauling.

In a former article in ROCK PRODUCTS AND BUILDING MATERIALS, reference has been made to the emancipation now at hand for the crusher operator by the introduction of the autotruck for deliveries independent of railroad service and railroad equipment. This opens the door of opportunity for the development of the full commercial basis of operating and rock crushing establishments, because well designed and perfected equipment for handling and rehandling the product of the rock crusher is already provided by the locomotive cranes, equipped with properly designed buckets to take care of every possible requirement. The surprising economy of reclaiming stored material with locomotive crane and grab bucket equipment will demonstrate that the advantages of running the plant steadily for stock is feasible and very profitable as well. When the crusher can be pushed to produce one size independently, while accumulating other sizes in storage at minimum

cost the real economics of the rock crusher will be developed, and not before.

#### Collateral Value of Rock Products.

Taken as a commercial commodity, screened and separated crushed rock is an ideal collateral security, far better for the consideration of any banker than nearly any other. It is an indestructible asset when properly piled upon a storage yard. It would take all the forty thieves to carry off a dollar's worth at one time; it cannot deteriorate by action of the weather, and fire can do it no harm, so it never will need to be insured. But it is a safe, permanent and unchanging asset, of distinct value and certain demand. Any crusher plant providing a storage stock of its own product equal in value to the total cost of its investment would have higher credit according to its size than that of any bank or any government. The actual metal in its marketable condition, plus the outfit that produced it, is visibly 200 per cent of the investment. This is clear enough for any banker to see, and there is no reason not to consider our finished product upon the same basis as any other completely manufactured article. It is really worth more than the average run of raw gold ore, for a whole lot of money has got to be spent on that before its value is fully developed, while in the case of crushed rock, screened and stored there is no more outlay involved, merely reclaiming it for the consumer when he arrives and calls for the money.

#### Locomotive Crane to Revolutionize Credit.

Recognizing all this to be true, there arises the only one objection, namely, the cost of producing such an amount of stock in storage. While it is true that \$50,000 or \$75,000 when expressed in crushed rock will make several fair sized piles, even such a thing is no stupendous operation to handle with a good locomotive crane steadily operated in properly laid out yard to accumulate in a single season incidental to its regular handling and rehandling work.

The total cost of even such an accumulation of stock in storage on the yard would come out of the waste; its actual cost is already being paid for, yet it is not in evidence as a physical asset. Simply store the sizes not called for today, and push right on to produce what is in demand. By



LIMESTONE STORAGE OF A PORTLAND CEMENT MILL IN NEW YORK STATE, IN WHICH A MILLION TONS ANNUALLY ARE HANDLED.



so doing there will be no such thing as cutting the price upon half or more than half of the product of the plant in order to move it when nobody wants it. Keep it, and sell it at full price when it is in demand. The difference in money will more than pay for the production and storage of every ton of material that goes into stored stock.

We have had some of the brightest engineering brains of this country working with us to help design the most efficient typical storage yards for a crusher plant, as equipped with a locomotive crane and grab-bucket for reclaiming the product, and figures have been worked out that can doubtless be guaranteed to prove all the essential and necessary economies. All of the cranes that have been put to work in quarries have given good and profitable accounting of their operation.

#### Testimony of the Heaviest Crane User.

One quarryman, who is using three big cranes, recently said: "I am working my quarry entirely by machinery. Twenty-five men, eighteen of whom are high-grade skilled workers with the locomotive crane, and dinky trains outfit are loading the same tonnage that in years gone by called for 150 to 160 quarry laborers. It would be impossible to get such a number of men now to do quarry work and keep them steadily on the job. The restlessness of quarry labor as we have it now makes handling equipment indispensable. Without the locomotive cranes and dinky trains we could not operate at all. The cost per ton of our product is lower than it ever was, and all the incidental bother that is indispensable with big force of rough workers is dispensed with. We don't have to listen to the family rows, and old-world feuds that foreigners brought along with them, and resumed here right after the first pay day. There was a time in which every pay day was the signal for a shut down until the vendetta warfare subsided amongst the foreign help. We had to keep a man regularly to represent the concern at police court hearings as his principal occupation. It was the most distracting and costly item that the big quarryman ever had to contend with. It was not business at all, for half the energy of the plant management had to be expended upon the human element of the ignorant help. These big labor saving machines call for a better grade of men, civilized and family men, who earn good wages and appreciate and observe all the fundamentals of good citizenship."

It would be difficult, indeed, to find more forceful testimony in support of the recommendation to apply insofar as possible cranes, dinky engines and trains, steam shovels and all other labor-saving equipment to future quarry operations, if financial returns happen to be the main object of such industrial effort.

#### Speaking About Quarry Labor.

Quarry workers have been getting fewer and fewer for the past ten years. This condition has been observed and discussed by experienced quarry operators, and 1915 was the worst year in this respect that has ever gone to record. The large number of military reservists of Italian, Hungarian and Slavic origin that have returned to serve under the colors of their native countries has withdrawn a very large fraction of the labor that has been depended upon during the last few years to perform the hand labor in quarries. There is no reason to expect that many of them will return to their former employment, even if the war should reach a determination, for the mustering out process will doubtless consume a year or more.

The widespread tendency to pay high wages temporarily, at least, for this same class of labor in the munition factories that have sprung up everywhere has drawn very heavily upon those who have not left the country, and none of those probably who have been given higher pay under such circumstances will ever again be willing to work upon the old basis, because few if any of them understand or appreciate the cause and rea-

son for such advanced pay. Such individuals of this class who will be forced by necessity to resume former occupations will be unwilling workers, dissatisfied with all their surroundings and consequently constant disturbers of future progress.

The same condition with reference to labor in the employment of road contractors obtains with full force and effect. The trenchers, graders, spreaders, rollers, driven by steam or other power, with the very minimum of human labor, is the only recourse to progress to future road work. Even with all these advantages every economy of equipment and administration will have to be resorted to in order to keep the margin of profit in road construction work within the bounds and possible dimensions of financial appropriations to induce the mileage of new good roads that is essential to the helpful expansion of the industry as a whole.

#### Mechanical Transportation Indispensable.

Another momentous change that has come and will hereafter always continue as a factor of first importance in connection with road contracting and the operation of rock crushers is that of mechanical transportation. The threadbare and worn-out system of employing local farmers' teams to haul road material has completely exploded. The inefficiency of such teams which has always been a burden upon the soul of every road contractor does not spring by any means entirely from physical reasons. It is true that the grass-fat work animals of the farmers, often unshod and accustomed to hauling light loads of hay, fodder and other farm products, cannot be expected to be efficient in hauling such commodities as crushed rock, drain pipe, cement, or any other supply indispensable to the construction of roads, culverts and bridges. But the farmers for the most part are made inefficient by the idea that they are working on a public job, which has depended upon his vote for its existence and must be paid for out of their taxes. They expect by hauling a few loads of material and giving a few days of attendance to the road work to get a voucher on the township trustees or a check from the contractor that will amount to a great deal more than the total taxes that they have to pay.

It is true that a majority of the farmers who own available teams deliberately plan to get a big, juicy profit out of the use of their team, and it has more to do with their inefficiency than anything else.

The cost of hauling road material when figured upon the basis of the ton mile has been divided by three in every case where a traction engine with trailer train or auto-truck with trailers have been employed to displace the farmer teams. Indeed in many cases the cost per ton mile has been divided by five or even more by this wonderful and far reaching improvement.

The transportation feature is such an important item of the cost of road building that no road contractor can longer consider himself as being in the road building business without one of the approved mechanical systems of transportation.

There has already in these columns been presented tabulations of cost and comparisons which have demonstrated so clearly the principle of hauling by mechanical equipment that now there only remains the resolution to put it more generally into practice.

This review of the conditions which surround modern road construction and the operation of the quarry, in a way reviewing the features that have been touched upon during the past year, will make historical reading in the years that are to come. Every one of the suggestions contained herein are founded upon developments observed while they are in the nascent state. All of them will blossom out into the common practices of the industry in the more intelligently conducted, more profitably operated and more conservatively administered rock crushing and road building industry that the future has in store.

#### INDIANA STONE MEN AT INDIANAPOLIS.

The annual meeting of the Indiana Crushed Stone Association will be held in Indianapolis, Jan. 12 and 13 at the Claypool Hotel. A large and representative attendance of the crusher operators and prominent road builders of Indiana is anticipated. The usual enjoyable banquet occasion will be a feature of the program after the discussions of the economic and business propaganda of the coming season have been discussed and formulated.

#### INTER-STATE STONE MEN AT COLUMBUS.

The Inter-State Stone Manufacturers' Association will hold its annual convention at Columbus on Jan. 19 and 20 at the Virginia Hotel. Extensive preparations are being made to secure a number of speakers of national fame to speak upon topics of vital interest to the great road building movement. It is the earnest hope that every rock crushing concern in Ohio, Indiana, Illinois and Kentucky will be represented and join in the work of this organization, which has accomplished more than any other perhaps in the promotion of interest in the macadam type of highway construction.

#### DOLLAR STONE IN NEW YORK MARKET.

New York, Dec. 30.—M. D. Wandell, secretary and manager of the New York Trap Rock Co., announced today an advance of ten cents in the price of crushed trap rock, bringing the price along side of dock in 500 cubic yard lots to \$1.00 for inch and a half sizes and \$1.10 for three-quarter inch. There are only two plants, the New York Trap Rock and Tomkins Brothers, being operated at this time, so far as it has been possible to ascertain. Speaking of conditions and price prospects, Mr. Wandell said:

"I know of only two plants that are operating now, owing to closing navigation on the upper Hudson. In the meantime there is a most unusual demand for crushed stone of all kinds in this market. The fact that there is a similar demand for this commodity all through the east accounts for the advance in price here. I have been asking on future delivery business even higher prices than those you quote and there does not seem to be any difficulty in closing. I suppose under normal conditions it would not be necessary to advance prices, but when it is next to impossible to get barges and cost of fuel, labor and all supplies entering into the crushing of stone, coupled with a strong building and storage demand, it seems improbable that prices would remain steady. We are on the brink of one of the most active building material markets we have ever known."

#### Echoes from the Quarries.

Suit for \$3,500, involving breach of contract, has been filed in the Milwaukee courts by the Lake Shore Stone Co. against the Allen Construction & Supply Co. of Illinois, alleging that the construction company contracted in July for 11,000 cubic yards of crushed stone and screenings to be used on a road in Saugatuck, Mich., and later refused to accept the stone.

A deposit of decomposed rock of a greenish color, said to be valuable for its chemical properties, is reported to have been discovered in the vicinity of Rudolph, near Grand Rapids, Wis. Chemists representing roofing companies have been on the ground endeavoring to determine the extent of the deposit.

According to advices from Dell Rapids, S. D., a new quarry and crushing plant is to be opened at that place on a tract of land recently sold by Henry M. Smith.

# SAND and GRAVEL

## Problems and Progress in Sand and Gravel Washing

*The accompanying article was prepared especially for ROCK PRODUCTS AND BUILDING MATERIALS by Frank M. Welch, sales engineer of the Webster Manufacturing Co., Tiffin, Ohio.*

*The series now running on the efficient and economical production, storage, and handling of crushed rock, sand and gravel, will discuss in future numbers the various details of operation such as quarrying, crushing, grinding, washing.*

*It is not with the object of boosting any particular apparatus or method of operation that these articles are prepared, but with the single purpose of developing the fullest information upon the important subjects treated, and wherever a patented article is referred to, due credit will be given.*

*The series will be continued.*

A sand and gravel washing plant, broadly speaking, is a combination of individual ideas, local practice, market requirements, theory, engineering, common sense and errors, all bound together in the form of a mechanical structure, varying in appearance and operation from most all the others of its kind. The percentage of them which are maintaining maximum efficiencies is deplorably low. Every plant has been designed to meet the local conditions, and these are never found to be identical, no matter how near to one another the operations are located. The controlling elements, which can be classified under the two heads of natural conditions and market conditions, are beyond the control of the individual, except in so far as he can simplify his problems by using wisdom in the selection of his site. The natural environments, which are controlled by topography, geology and location, will never cease to alter, to a certain extent, the general layouts of different plants, but the variations in the market requirements can and should be improved universally, without delay.

New and more modern washing and screening plants, nevertheless, are constantly in the course of construction, for no progressive producer becomes discouraged in one of the most lucrative of industries, engaged in the extracting of riches

from the earth. The lack of symmetry among the various installations is not surprising, however, when the conditions directing the course of the designer are enumerated. In the first place, the quality and proportionate grading of the raw material in the bank regulate the sizes and arrangement of the screens. Then the railroad car supply and frequency of switching service determine the storage requirements, and the percentage of truck or wagon trade dictates the arrangement of the bins. Whether the bulk of the sand and gravel in the bank is above or below the level of the loading tracks, whether the deposit is deep or shallow, and whether it is under water or not, all affect the method of excavating. This in turn alters the elevating equipment, and all of these elements together with the water supply and general location decide the advisable capacity for which the plant is to be designed and the most economical kind of power to be used.

On top of these natural problems, the local market conditions, which are different in every community, must be adhered to. It is not uncommon to hear a producer state that one contractor wants  $\frac{3}{8}$  inch gravel and that another wants 1 inch gravel with no material contained in them under  $\frac{1}{8}$  inch, while a third one wants his material uniformly graded from  $1\frac{1}{4}$  inch down to coarse sand. Invariably he states that he cannot suit them all, and if he has been in the business long he tells you that he has educated his customers to accept certain sizes that he is equipped to produce, and under the circumstances he has done exactly right. But why should numberless indiscriminate producers or localities be each educating their markets to suit themselves regardless of the actual merits of the material? Furthermore, isn't it inconsistent that one man should require his material of one size and one of another when both are using it for exactly the same purpose and possibly are sub-contractors on different portions of the same job? The term "torpedo" in one community means a different grade of material than it does in another. "Pebbles" in many localities designates a supe-

rior grade of washed and screened gravel, while in some vicinities it is used solely by the crushed stone producers as a term of contempt for the material produced by their competitors, the gravel men.

### Standardizing the Market.

These varied market conditions will continue to exist until there is a national movement to improve them, and this can be brought about only by the great engineering societies or by the National Sand and Gravel Producers' Association, or better, by all combined, which will standardize the sizes or grades, terms and mixtures of sand and gravel throughout the United States. Until that time, it will be impossible for engineers, designing sand and gravel washing plants, to concentrate at a standpoint from which they can base any standards or compute any data regarding capacities, water and power requirements, or crushing, that will be to any degree reliable, or of much value in designing or locating a new installation. After this is accomplished, natural conditions will still furnish innumerable complex problems for the designing engineer. It is true that some communities have already accomplished a great deal towards standardization in their immediate localities, and in a few instances, state-wide organizations have been or are being formed, which are taking up these matters slowly and carefully.

The fact that the business of producing clean and sharply graded sand and gravel is comparatively young, accounts in a great measure for the lack of progress which has been made in standardizing. It has been but a few years since architects and engineers began specifying washed sand and gravel in definite proportions of sharply graded sizes for reinforced concrete work, mass concrete work, and for highways. However, the practice is increasing rapidly, especially in the metropolitan centers and thickly populated districts, where the most modern methods are followed. The strictness of material requirements is annually reaching farther among the smaller communities. Therefore, within the limits of several states, there can be found sand and gravel washing plants in all stages, ranging from primitive and inadequate makeshifts to the most modern equipments such

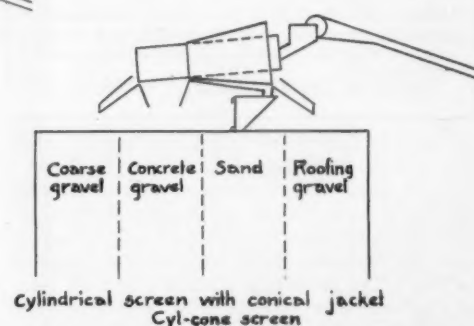
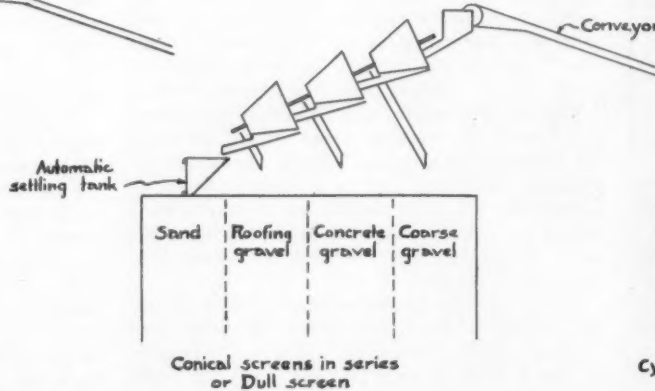
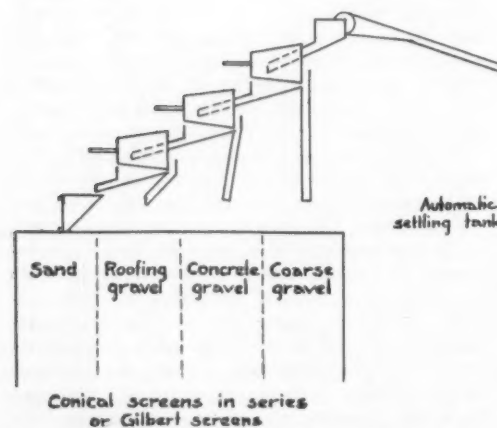
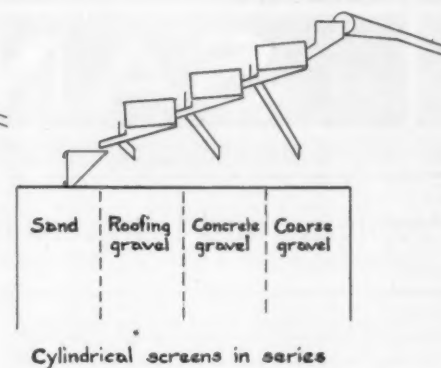
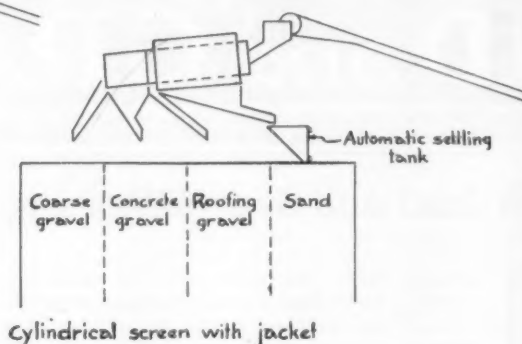
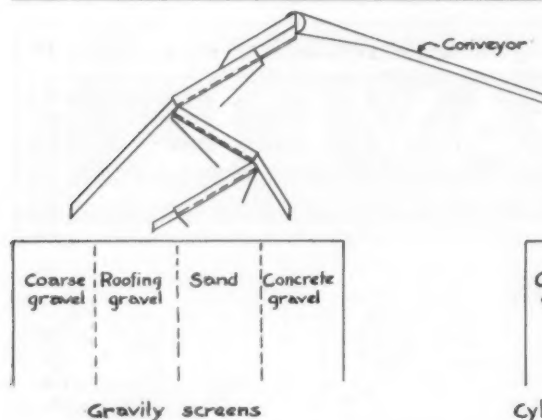


TYPE OF MODERN SAND WASHING PLANT.



WASHING PLANT OF THE CLEVELAND MATERIAL CO.





as are found in the outskirts of some of the larger cities.

Before one universally recognized set of standards is adopted, there doubtless will be two, each one of which will predominate in large sections respectively. One will describe and specify the maximum and minimum limits of the following grades:

- 1—Fine sand quite generally known as "brick sand."
- 2—Coarse sand often termed "concrete sand."
- 3—"Roofing gravel."
- 4—"Concrete gravel" for reinforced concrete construction.
- 5—"Coarse gravel" for mass concrete work such as piers, retaining walls, etc., where reinforcing rods are farther apart or are not used at all.

In purchasing material in accordance with these specifications, the contractor does his own mixing of sand and gravel at the construction site. Specifications in this form will, without doubt, closely approximate those accepted when a single and universal standard is finally approved.

The other forms will consist of a table of graded mixtures for use in various types of construction work, which will eliminate a portion of the mixing on the part of the contractor, but which will be very difficult to be universally agreed upon or to inspect. Moreover, when the material is mixed at the washing plant, the proportions are extremely uncertain, even though they are separated in accordance with the first standard and then proportioned when loading, unless the contractor has a representative at the plant to check the quantities as they are measured. Ordinarily, if the material is once separated it is shipped in that condition, and when graded mixtures are produced, the desired results are accomplished by merely eliminating certain portions of any grade, which occurs in the bank in excess proportions, during the screening and washing process. It is evident that owing to the lack of uniformity in the bank no accurate mixtures can be obtained in this manner, and as architects' specifications are constantly becoming more rigid, a standard, embodying the production

of graded mixtures rather than of separate sizes, will probably never dominate universally. In central Indiana, however, the material sold at the present time from several of the largest plants is shipped in this way, but without doubt these operators will eventually give way to the more accurate system.

#### Screening and Washing.

Methods of screening, grading, and washing have progressed through a period of evolution covering comparatively few years, all stages of which can, as before stated, be witnessed without traveling far. The old method of shoveling the material through an inclined stationary screen where no washing occurred was the beginning. Later a man with a garden hose stood alongside this embryo plant and played a stream of water on the material as it passed through the screen or sieve thereby making it look brighter, whether he succeeded in getting it much cleaner or not. These operations were executed by the contractor on the job and only on high-class jobs at that. Finally, some owners of gravel banks, who had previously been allowing the contractor to shovel his material into wagons and to haul it away at a fixed price per load, developed the idea that if they could dig it out of the bank themselves and screen it and load it into separate bins on a large scale, they could save the contractor some money and make a profit for themselves. They tried this and succeeded.

They excavated the material from the bank by various methods, dumped it onto a bucket elevator or a belt conveyor which carried it to the top of the plant, and discharged it over one or two stationary inclined sections of wire cloth, known as gravity screens. These screens were arranged over bins, so that sand would fall into one bin and one or two grades of gravel into others. From these bins, the material could be spouted by gravity into wagons and the process on the whole was at least a great improvement over the old system. Finally one or two streams of water were sprayed onto the material and "washed" sand and gravel was produced. However, as their business increased, they

found that they were greatly handicapped, because of the continual clogging of the gravity screens and their inability to obtain sharp separations in large capacities with this type of screen. They tried all kinds of mechanical knocking devices, but eventually they came to using bar screens or "grizzlies." For a long time these were quite satisfactory for making the larger separations because they did not clog so badly, but inspectors representing the architects and owners later complained of there being too many flat stones of large dimensions in the gravel. The producers then returned to the wire cloth and finally changed to perforated steel, some favoring one and some the other.

While searching for some more efficient method of sharp screening on a large scale, the shaking screen came into use. It was thought to be the last word, because it was giving excellent satisfaction when used for screening coal at the coal mines. But sand and gravel weighs about twice as much per cubic foot as coal, and they soon found that when washing and screening in large capacities, the reciprocating motion of so much weight caused wear and tear on all the moving parts to such an extent that the scheme was not practicable. Moreover, extremely heavy timber supports were required with huge bracing which were expensive to construct and the sand and gravel producers found themselves increasing their fortunes very slowly or not at all. Each plant was an experiment station surrounded by a junk heap and some of them have not yet convalesced.

At this stage of the business the revolving screen came into use, and why no one had thought of it before was a mystery. Again rapid strides began to take place among the progressive sand and gravel producers. They found that with the revolving screen the serious clogging of the perforations was reduced to a minimum. They also found that more thorough washing could be accomplished with this type of equipment than with any of the others. The power required to operate the revolving screens was less than it was for the shakers and the upkeep and maintenance were nothing in comparison with what they were when operating the old way. The

revolving screen had practically overcome all the difficulties which had been experienced in any of the previous methods.

Revolving screens of every conceivable shape and size were tried out. Conical screens, cylindrical screens and finally combinations of both were used in various forms, many of which are now giving excellent results when properly constructed. Some operators use a series of small revolving screens, each arranged to make one separation and to deposit the same into its respective storage bin. This equipment, in some instances composed of a series of conical revolving screens and in some a series of cylindrical revolving screens, is proving successful at the present time.

The idea, however, for using one large revolving cylindrical screen, made up with the various sizes of perforated sections arranged successively and equipped with either a cylindrical or a conical sand jacket is a new development with merit. It has simplicity of construction and of driving connections, and the same or better results are obtained with the total height of the plant materially reduced, a recognized advantage always.

Diagrams of the various screening arrangements which have been most extensively used are shown in the accompanying cuts.

#### Settling Tanks.

While the many screening arrangements have been approaching their limits of perfection, the washing process has been shaping and reshaping itself to conform to the various types of screens. The washing and screening processes which, as they occur simultaneously, are considered as one process, consist of three distinct actions. First the clay, loam or dirt is dissolved in the washing water; second the sand and gravel are screened or separated, during which action the dirt-laden water will pass with the finest product the sand; third the clean sand must be separated from the dirty water. The first and second of these actions occurred during most of the screening processes that have been described, but the third, the separating of the dirty water from the clean sand was the cause of further experimenting. Originally the sand, water and impurities were all spouted into the sand bin, because there is no screen which will eliminate water from sand without wasting most of the sand. This method cleaned the gravel thoroughly, but the sand was scarcely any cleaner than before. A large portion of the impurities was eventually drained off by constructing water-tight sand bins and allowing the water to overflow, carrying with it all the sediment that could rise to the top. Large bins or areas were often fenced in on the ground, and used as stationary settling tanks, from which the sand was shovelled into wagons or cars after the dirty water had drained off. None of these schemes thoroughly cleaned the sand owing to the extreme quiescence of the body of water. Shortly after the revolving screen came into use, however, the tilting settling tank was invented.

This tank built of wood and later of steel was simplicity personified. It was built in sizes from 4 feet to 6 feet square, with a sloping bottom, and with valves or outlets for clean sand on the front side near the bottom. An overflow spout for the water was located at the top of the front side. A compartment was built in the rear where a few large rocks were placed to act as counterweights and the whole thing was supported on two pivots or fulcrums located near the center of gravity. The sand and water were spouted to this tank after passing through the screens. The sand would settle to the bottom which sloped toward the front, and when a quantity was deposited at this point sufficient to overbalance the counterweights, the tank tilted forward, which automatically opened the valves and discharged the clean sand into the bins below. Meanwhile the water was overflowing to a waste spout. The constant tilting and balancing of the settling tank, furnished sufficient agitation to keep the clay and loam in suspension near the

surface of the water, thereby allowing practically all of it to overflow to the waste spout.

The tilting or automatic settling tank has been passing through various stages of evolution simultaneously with the revolving screen, during which some slight improvements in the details have occurred and many radical alterations have been tried with the idea of increasing its sensitiveness. The same tank, however, with very few alterations is now in common use and it is very doubtful, if any settling tank which varies in elementary principle from the first one used will ever supersede it.

#### Scrubbers.

Additional and more thorough washing facilities are now used in the best plants, in the shape of scrubbers or preliminary washing drums. These are cylindrical or conical revolving drums containing agitating vanes and are located at the top of the plant, between the discharge of the elevator or conveyor and the screens. All the material passes through them and receives a thorough scrubbing and agitating, which insures against any hard or unbroken lumps of clay entering the screens and passing with the gravel. By the use of these scrubbers, if of ample size, it is often found that material from a bank having a high face can be washed fairly clean without having first been stripped. Fair results can be gained in this manner only when the thickness of the soil is not more than 2 per cent or 3 per cent of the face of the bank. Invariably, however, better results can be obtained if the soil is first stripped from the property. The scrubber has succeeded in making it possible to transform otherwise impossible raw material into fairly high-grade marketable sand and gravel, and its additional expense is so slight that no operator can afford to eliminate it.

The progress of the elements of screening and washing having been traced to the present modern installation, the auxiliary operations such as excavating, elevating, power transmitting and loading which involve old and accepted methods, not affiliated with the sand and gravel business alone, will be or have been discussed in other issues of ROCK PRODUCTS AND BUILDING MATERIALS.

If the prospective producer of washed sand and gravel would visit plants in communities entirely remote from his own in order that he might have the advantage of the most variable experiences of others, he would be less apt to start in the business, as so many have, at a point in the ladder of progress, several rungs from the top. He should employ an experienced engineer to design his plant, who is familiar with the operation of washing and screening equipments under all conditions, in order that he may leave no stone unturned toward equipping himself to produce the cleanest and sharpest material within reach of his market and to be able to excavate, wash, screen and load it at a lower cost per cubic yard than can any of his competitors.

#### CALENDARS AND SOUVENIRS.

A "strong" box or receptacle for bonds and other valuable papers is being distributed by the Society Advocating Fire Elimination, and with it comes the season's greetings from that organization. In the letter accompanying the souvenir, Secretary, R. P. Stoddard, says: "This New Year's souvenir leaves here packed full of good wishes. May it be a constant reminder to you of the existence of the S-A-F-E and its efforts for better building."

The United Fuel & Supply Co., Detroit, Mich., has presented to the trade a very useful souvenir in the nature of an ash tray and match receptacle. Accompanying the gift is the wish of the company in the following words: "May the sun of prosperity shine upon you, bringing you success as lasting as the pyramids. May your health be perfect, and your contentment great. These, with thanks for favors shown or business given, are Christmas greetings and wishes for 1916."

The Improved Equipment Co., New York City, has remembered its friends with a combination eight-inch celluloid desk rule and blotting pad.

Chicago Portland Cement Co.'s greetings of the season were sent out in the shape of a small desk or wall calendar, handsomely embossed with the name of the recipient and the words, "We wish you heaps of joy; of sorrow, none at all in 1916."

W. S. Mallory, president of the Edison Portland Cement Co., presented each of the presidents and sales managers of the various cement companies with an attractive card containing one of Robert F. Hall's poems, entitled "Tonnage or Profit," which is printed in the cement department of this issue.

The Woodville Lime & Cement Co. has presented the trade with another of its business calendars, space being reserved for each day of the month except Sunday, with a few lines opposite each date for memoranda notes. Each month occupies a separate sheet upon which appears an illustration of either the plant of the Woodville company or building in which Woodville products have been used.

The Universal Portland Cement Co.'s 1915 calendar portrays a laborer carrying a sack of Universal Portland cement at a fast rate of speed. Underneath the gentleman are the words, "Concrete for Permanence." A feature of the individual monthly calendars is found in the addition of enough days of the previous and succeeding months to fill three extra lines. All holiday dates are enclosed in a yellow border.

The Newayga Portland Cement Co. has supplied the trade with an attractive calendar, prominent upon which appears the "everlasting" trade mark of the company.

The Wheeling Wall Plaster Co. remembered the trade this year with an attractive wall calendar containing the picture of a beautiful lady. Accompanying the gift was the season's greetings in the words, "On the threshold of another year we extend to you our cordial greetings for 1916, and thank you for those pleasant business relations which exist between us."

The A. Leschen & Sons Rope Co. presented its "Merry Christmas" greetings to the trade in an attractively illustrated booklet, the front cover of which presented a winter scene and the figures "1915-16." The colored illustrations throughout the booklet present scenes, many of which are familiar to the quarry and building fields. In each of these, Leschen wire rope is interestingly displayed.

The Allentown Portland Cement Co. presented the trade with a calendar, colored as nearly like original concrete as possible. In addition to the trade mark of the company and the calendar pad appear the words, "Concrete for Permanence."

The Edward Bryant Co. extended the season's greetings on a neatly engraved card.

Smith, Emery & Co. greeted the trade on Christmas day in the following words: "Like the Town Crier in history we call to our neighbor across the way—Low Noon—Christmas—all's well." Upon the gold coins of America are words of hope and faith—"Liberty," "In God We Trust." At this blessed season let us join in truth and sincerity in thanks to Him who confirmed our trust in God and Who opened the door to universal liberty and peace. While we business men may not have realized our full ambition during the year we have been spared the great calamity and are more fortunate than perhaps we know. Let every true American be stout of heart, holding steadfast to the ideal—"Liberty," "In God We Trust." With these mightiest forces we will encompass not only our individual but our national destiny. Wishing you the full mete of Christmas joys and of prosperity for 1916, we remain, sincerely yours, Smith, Emery & Co.

The Cleveland Railway Supply Co., Cleveland, Ohio, has just published a catalog on locomotive cranes. The publication is in keeping with the high standards of this company and in addition to descriptive matter, contains information of much value to crane users.



# GYPSUM PRODUCTS

## Gypsum Firms Have Good Year.

The year 1915 proved far better for the gypsum industry than even the most sanguine producer anticipated nine or ten months ago. While the total production and sales may not have superseded those of 1914, reports from the various manufacturers are to the effect that a favorable comparison can be made with the figures of the preceding year.

The first part of the year was rather slow, but the last six months were exceptionally good, and if figures for this period were compared with those of the last half of 1914, there undoubtedly would be shown a gain in favor of the 1915 period. It is only due to the poor start of the first six months that the splendid showing which 1915 makes is not away in advance of the last few years.

The prices of hard wall plaster and other gypsum products have improved during the year and at the present time may safely be termed "firm." With the prospects of another good year, prices should remain in this condition.

Reports from all parts of the country are to the effect that prospects for 1916 are exceptionally bright. Not only does optimism prevail in the large eastern cities, but the influence of the past six months' business and the plans on the architects' boards at the present time, has caused even the most conservative manufacturer, located in an isolated territory, to speak well of the coming year. The New York situation is very bright. There is plenty of prospective work in Chicago, and, with the good crops of the West, things are shaping themselves in that part of the country which can predict nothing but a splendid building year.

The continual gain in the number of permits issued in practically all cities of the country and the glowing reports of a splendid building year for 1916 will have a tendency to put all manufacturers of gypsum products in line fully prepared to do the best year's business in the history of that industry.

### J. H. HOLMES PASSES AWAY.

John H. Holmes, manager of the Philadelphia office of the firm of J. B. King & Co., manufacturers of plaster, with offices in the Builders' Exchange, died recently in Cazenova, N. Y., while paying a

visit to his son. Mr. Holmes, who was a widower, was taken ill several months ago, having contracted a severe cold, which on Thanksgiving day developed into pneumonia. The attack, however, was slight, and he decided to visit his son. The result was that he encountered a serious relapse from which he failed to recover. He was a member of the Manufacturers' Club.

### BETTER TONE TO EASTERN MARKET.

New York, Jan. 4.—There is a much better tone to the gypsum and general plaster market in the entire east. While base price per net ton for gypsum is \$8.50 today there are conditions, according to well informed authorities, making for possibly \$9.00 gypsum before long. Commenting upon these exigencies, H. G. McCormick, of the U. S. Gypsum Co., said:

"Since September we have been getting good prices for our products. It is not conservative to make predictions and prophecies are out of date, but there certainly are unmistakable signs of a big demand for gypsum beginning with the 1916 building season. The inquiry that is now running makes it very apparent that a better movement is under way. Since the war broke out we have been embarrassed with a shortage of labor. We have been taking on some negro help, but we have found that the best of this was already employed and that which remained was only of moderate efficiency even for unskilled labor. So we have had to employ white American help and naturally we have had to pay them more. The increasing cost of fuel and the change in freight rates and traffic conditions have combined to make it increasingly necessary for us to get a better price than \$8.50 for our products. I would not say that the change will come at once, but I look for some action in this line before the new building season is well advanced."

### KEYSTONE ISSUES BOOKLET.

The Keystone Plaster Co., with sales offices at Philadelphia, has issued a booklet entitled, "A Word About Keystone Products," in which is briefly recorded the uses to which these may be put. A statement in the publication records the fact that this company has been manufacturing plaster for the past twenty-five years.

### U. S. G. STOCKHOLDERS TO MEET.

A meeting of the stockholders of the United States Gypsum Co. will be held at Jersey City, N. J., on Tuesday, Jan. 18.

### BREVITIES OF THE GYPSUM INDUSTRY.

Plastergon Wall Board Co., Niagara Falls, N. Y., has increased its capital from \$25,000 to \$100,000.

The Hanover Gypsum Co., Great Falls, Mont., will erect a plaster mill at Hanover, Mont.

Lyden & Bickel are low bidders on the plain and ornamental plastering, and decorative artificial stone work, etc., for the new Civic Center library in San Francisco, Cal., their figure being \$42,396.

### FIRE RISKS IN RETAIL YARDS.

The Louisiana Fire Prevention Bureau recently made an interesting ruling which touched on the fire risk in a yard in which lumber and building materials were stored. So long as there is a clear space of fifteen feet maintained between building material, properly piled in the yard, and adjacent property there can be no fire risk, or at least added risk, the bureau decided.

The matter in question touched upon a complaint of residents in New Orleans that the Samuels House Wrecking Co. had created a new fire risk by storing a lot of building material on property belonging to the school board. In making its decision the bureau declared that "such a yard adds no more fire hazard to the neighborhood than would an ordinary frame building or mercantile risk, possibly not as much; but if the storage of the material was visibly increased and the assured is careless in handling same it might in time constitute a menace."

E. J. Brannock Builders' Supply Co., City Point, Va.; capital \$15,000; officers, B. C. Carmine, president, H. B. Carmine, vice president, both of City Point; and E. J. Brannock, secretary-treasurer, of Cambridge, Md.

J. F. Baldwin Building Supplies Co., Birmingham, Ala.; capital, \$10,000; officers, J. F. Baldwin, president and general manager; Crundell B. Baldwin, secretary-treasurer.

**1916**  
**FOR**  
**BIGGER BUSINESS**

**Concrete for Permanence**  
**"Wolverine" for Concrete**

Wherever used "Wolverine" has  
always given the highest satisfaction

Visit Our Exhibit at  
Ninth Chicago Cement Show — February 12-19, 1916  
Coliseum and First Regiment Armory

**WOLVERINE PORTLAND CEMENT CO.**  
**COLDWATER, MICH.**

Write for prices and information. W. E. COBEAN, Gen. Sales Agt.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

The market place of the building material industry. Employment department, machinery wanted and for sale, etc. If your wants are not answered in this page, write a letter to this office.

**THE FRANCIS PUBLISHING CO.**  
537 S. Dearborn Street Chicago, Illinois

# :: THE :: BOURSE

Advertisements will be inserted in this section at the following rates:

For one insertion.....35 cents a line  
For two insertions.....45 cents a line  
For three insertions.....60 cents a line  
Eight words of ordinary length make one line.  
Heading counts as two lines.  
No display except the headings can be admitted.  
Remittances should accompany the order. No extra charges for copy of paper containing the advertisement.

## EMPLOYMENT WANTED

**WANTED**—Position by man with technical education. Eight years' experience as operating chemist and superintendent, cement and lime plants, rotary kiln lime and dead burned dolomite. Just finishing construction job. Open for operation or construction work. Best of references. Address Box 1091, care ROCK PRODUCTS AND BUILDING MATERIALS.

**WANTED**—Position as plaster salesman. Have had four years' experience and can furnish best of references. Address Box 1088, care ROCK PRODUCTS AND BUILDING MATERIALS.

## EMPLOYEES WANTED

**SALES MANAGER WANTED**—Prefer one who has been successful in marketing Portland Cement, but this is not essential if successful in some allied line. We have an attractive proposition for the right man. All communications kept confidential. Address W. S. MALLORY, President, Edison Portland Cement Co., Easton, Pa.

**SALESMAN WANTED**—If you are a live salesman and have had experience in selling Portland Cement or some allied line, and are interested in an attractive salary proposition, address in confidence, W. S. MALLORY, President, Edison Portland Cement Co., Easton, Pa.

## MACHINERY WANTED

### WANTED—STONE CRUSHER.

A second-hand, either #2 or #2 gyratory Crusher. Advise condition and price. FOWLER & PAY, Mankato, Minn.

**WANTED**—Large swing jaw crusher. 24"x30" or larger. Give particulars and lowest cash price. Address Box 1090, care ROCK PRODUCTS AND BUILDING MATERIALS.

## MACHINERY FOR SALE

**For Sale**—One 6"x22" Alsing Engineering Company Pebble Mill, New, just as received from builders, complete with lining, pebbles, roller drive attachment, gears, etc. Cost \$2,500.00. Has never been installed. Will consider any reasonable offer. Address Foamite, care ROCK PRODUCTS AND BUILDING MATERIALS.

**FOR SALE**—Two Class A-14 Ruggles-Coles Rock Dryers. In first-class condition. Address Box 1089 care ROCK PRODUCTS AND BUILDING MATERIALS.

**FOR SALE CHEAP**—New Hardening Cylinder and 22 cars for sand-lime brick manufacturing. A bargain. Write THE MANUFACTURERS' EQUIPMENT CO., Dayton, Ohio.

### FOR SALE.

36"x12' Dull Tubular sand and gravel washer, used very short time and in excellent condition. A bargain. The NEWMAN SILICA SAND CO., Massillon, Ohio.

**FOR SALE CHEAP**—Two No. 8 Krupp Ball Mills in first class condition. SECURITY CEMENT & LIME CO., Hagerstown, Md.

**FOR SALE**—One 6 section Merriman & Vought steam sand drier, cost \$1,250. In first class second-hand condition. Will sell for \$350 f. o. b. cars Schenectady. This includes drier and all piping. Address THE KELLAM & SHAFFER CO., Schenectady, N. Y.

## BUSINESS OPPORTUNITIES

### A VALUABLE LIME PROPERTY.

400 acres choice lime deposit in Upper Peninsular Michigan. Assay 97% pure lime. One mile from Soo Ry. Six miles from Lake Michigan. Will sell or handle on royalty basis. Address Box 1092, care ROCK PRODUCTS AND BUILDING MATERIALS.

### "RAILS"

All sections of new and relay rails in first-class condition. Splice Bars, Frogs, Switches and Spikes also carried in stock. We purchase abandoned plants and cheerfully quote prices on any material that you may have to dispose of.

M. K. FRANK, Frick Bldg., Pittsburgh, Pa.



**1916—The Greater Business Year**  
**FEBRUARY Is the Big Convention Month of the YEAR**  
**NOW Is the Time to Advertise**

Robert W. Hunt

Jno. J. Cone

Jas. C. Hallsted

D. W. McNaugher

**Robert W. Hunt & Co., Engineers**

Bureau Of

**INSPECTION TESTS AND CONSULTATION**

General Offices

TESTS OF PAVING BRICK

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SEND FOR OUR BOOKLET "B"

**THE METROPOLITAN PAVING BRICK COMPANY**

Manufacturers of "BEST PAVING BLOCK MADE"

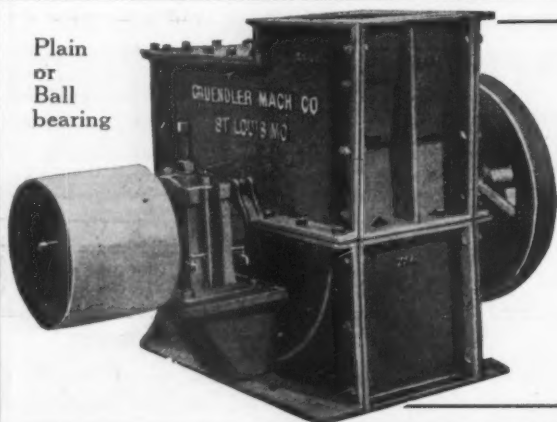
CANTON

OHIO

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



Plain  
or  
Ball  
bearing



## ECONOMY IN PULVERIZING

Designed by practical men and  
with the experience of many years

### The Gruendler Pulverizer

has proved itself to be an economical part of any pulverizing operation.

Grinds perfectly Limestone, Phosphate Rock, Coal, Brickbats, Coke, Kaolin, Shale, Marl, Fireclay, Bones, Tankage, Fertilizer Materials and Ores of all kinds. Any desired fineness in ONE Operation.

Write for further details.

**Gruendler Patent Crusher & Pulverizer Company**  
924-928 North First Street  
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IT WILL PAY YOU TO HANDLE THE MODERN FIRE PROOF  
BUILDING MATERIAL

We manufacture all sizes and shapes  
from the highest grade shale by the  
most modern process, including back-  
ing up, partition, floor arches and bol-  
low brick; also DRAIN TILE.

**VIGO-AMERICAN  
CLAY CO.**  
25 So. Seventh St., TERRE HAUTE, IND.

## BLAST HOLE DRILLS



We make the "CLIPPER"—The drill that is USED!

**LOOMIS MACHINE CO., TIFFIN, OHIO**

### ROCK PRODUCTS AND BUILDING MATERIALS

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JANUARY 7, 1916

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## Ask for CHICAGO-AA —Be Sure You Get It

CHICAGO-AA Portland Cement is your best assurance of high quality and bright, uniform color in concrete.

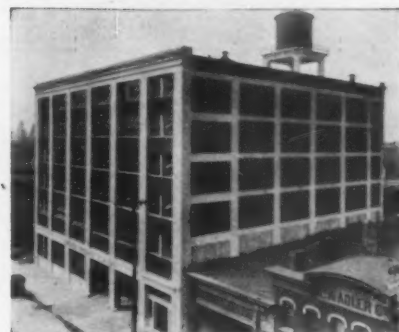
Be sure and visit the Joint Exhibit of the leading Cement Companies at the ninth annual cement show, CHICAGO, Feb. 12th, 19th.



The permanent plaster for interior walls. May be re-tamped as often as necessary. Makes a perfect bond on concrete, brick, tile or lath.

**Best Bros.  
Keene's Cement**  
The Plaster That Stands  
Hard Knocks

**The Best Bros. Keene's Cement Co.**  
Established 1889  
Dept. A, MEDICINE LODGE, KANSAS  
New York—Chicago



**B. J. JOHNSON SOAP CO. WAREHOUSE**  
Milwaukee, Wisconsin

Architect: LOCKWOOD, GREENE & Co., Chicago  
Contractor: WALTER W. OEFLEIN, Milwaukee

Over 10,000 barrels of Marquette Portland Cement, "The Certified Cement," were used in the construction of this modern fire-proof warehouse. The architect and contractor knew they could depend on the Guaranteed Quality of Marquette

**Marquette Cement Mfg. Co.**  
1335 Marquette Building : Chicago

"Concrete for Permanence"

## PLYMOUTH GYPSUM CO.

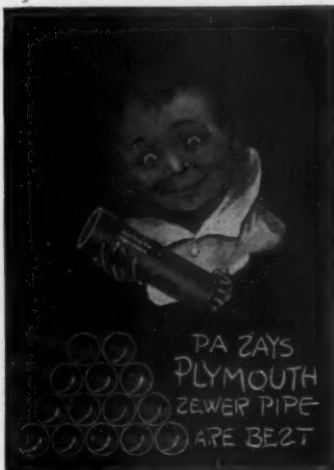
FORT DODGE, IOWA

Manufacture what is known as **QUALITY BRANDS**  
ORDER A CAR AND BE CONVINCED

<b>Plymouth Plaster &amp; Finishes</b>	<b>White Sand Float Finish</b>
<b>Plymouth Wood Fibre Plaster</b>	<b>Best Bros. Keene's Cement</b>
<b>Acolite Cement Plaster</b> (the long keeper)	<b>Sackett Plaster Board</b>
<b>Exterior Plaster</b>	<b>Tiger Brand Hydrated Lime</b>
<b>Fireproof Gypsum Partition Tile</b>	

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**PLYMOUTH  
CLAY  
PRODUCTS  
CO.**

FORT DODGE, IOWA

## NORTH-WESTERN PORTLAND CEMENT



The Reliable Portland Cement

A Portland Cement for the  
NORTHWEST

**North-Western States Portland  
Cement Co.**  
MASON CITY, IOWA

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**Listen to what you get  
when you order MONARCH**

Prompt shipments of the very best hydrated lime.

Lime that is perfect in whiteness, fineness, and of absolute uniformity.

Lime that will not "pip" in the wall.

Lime that you can trust and recommend to your most particular customers.

*We guarantee every pound we manufacture*

**The National Lime & Stone Co.**  
CAREY, OHIO

### Record of 48 inch Crusher for a period of approximately 11 months—

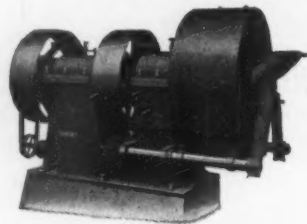
	Per Ton Crushed
Operating labor.....	\$0.00214
Repair labor.....	.00205
Material for repairs.....	.00280
Power .....	.00899
Total .....	\$0.01598
Less extraordinary items.....	.00228
Cost under normal conditions.....	\$0.01370

No. 1 Crusher ran 4,392 hours and crushed 197,640 tons of ore. One pair of discs ran 3,453 hours, crushing 155,385 tons at cost of \$0.0014 per ton for discs.

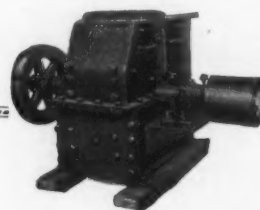
No. 3 Crusher ran 4,462.5 hours, and crushed 200,812.5 tons ore. One pair discs ran 4,462.5 hours, crushing 200,812.5 tons at cost of \$0.00109 per ton for discs.

Crushers handled 45 tons per hour, crushing 3 in. to ¾ in. and requiring 35 horsepower each.

*Eventually Symons Discs*



MANUFACTURED AND SOLD ONLY BY  
**CHALMERS & WILLIAMS**  
New York Office, Equitable Building  
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Use a

## K-B Pulverizer

to reduce your material economically from 3" to dust. Only 10-12 H. P. is required to crush 5-8 tons per hour, and 20-25 H. P. to crush 10-14 tons per hour.

This hammer-mill is built entirely of steel, and lined with manganese hardened steel plates to protect the frame from any wear. The hammers are adjustable so that their service is multiplied by four. The screens slide out like drawers, to insure easy access to the interior of the machine.

*Write today for catalogue*

**K-B PULVERIZER COMPANY, Inc.**  
86 Worth Street, New York City

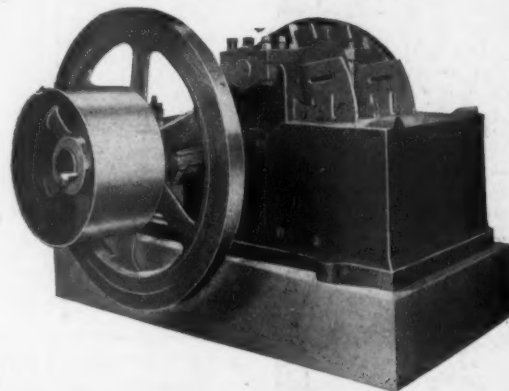
*"Built for Service and Durability"*

## One Advantage of the Blake Type Crusher

The bed, bumpers and all movable parts are cast with all holes cored, requiring no machine work whatever, which enables us to make the castings stronger to withstand the wear, and eliminates the possibility of mistakes in making repairs and lessens the cost of construction as well as the repairs to the consumer.

*Write today for further information and one of our booklets.*

**Webb City and Carterville Foundry & Machine Works**  
Main Office, Webb City, Mo.

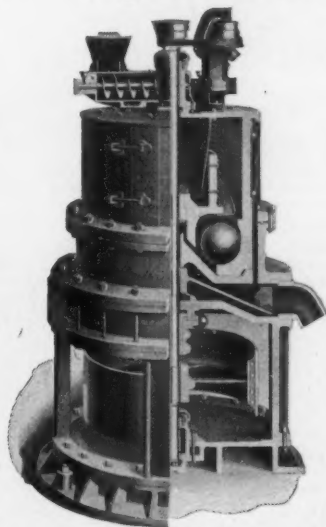


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## The Fuller-Lehigh Pulverizer Mill

*A Complete Self-Contained Unit*

The most economical mill for producing  
**Agricultural Limestone**



Reduces lump rock to  
20, 40, 60, 80, 100,  
or 200 mesh.

Requires no outside ac-  
cessory equipment.

Requires no overhead  
shafts, drives or  
screens.

All material discharged  
from mill is finished  
product.

No inside journals or  
bearings.

No inside lubrication.  
Uniform feeding sys-  
tem.

Constant and free dis-  
charge.

Low installation cost.

Low operating cost.

Low lubricating cost.

Dustless operation.

Built in sizes to meet the requirements of your trade. Grinds  
rock to meet the specifications of all Agricultural Experiment  
Stations.

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**Lehigh Car, Wheel & Axle Works**

Main Office and Works:

Catasauqua, Penna.

## Crushing Machinery Built to Meet All Demands

Large eccen-  
tric bearing.  
Spider ar-  
ranged for re-  
moval of the  
concaves  
without dis-  
mantling the  
crusher.

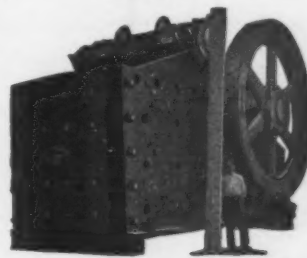


Shaft sus-  
pended at  
point of least  
motion.

Cast steel  
gear and pin-  
ion. Remov-  
able counter-  
shaft bearing.

Built in sizes from No. 2 up to No. 10.

Water-cooled  
pitman and  
pitman bear-  
ings. Remov-  
able bushings  
in pitman and  
pitman bear-  
ings.



Large open-  
ings allow-  
ing steam shovel  
operation.

Built in sizes up to 66" x 86".

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## Critical Inspection Proves Quality

### McCULLY Gyratory Breakers

Invite your examination.  
They're chosen for big, im-  
portant plants because—

### SUPERIOR Jaw Crushers

#### SALIENT FEATURES

Main shaft support-  
ed at the only logical  
point; that of no gyr-  
ation.

Hopper may be built  
into working floor, as  
it is not disturbed  
when changing head  
or resetting concaves.

Positive protection  
of eccentric from grit  
and dust. Cannot  
wear to a loose fit.

Flanged wearing  
plates.

Self-tightening head.  
Removable counter-  
shaft bearing.

Bushed bottom plate.

Steel gears.

Automatic lubrica-  
tion.

#### TANGIBLE FACTS

An enviable record  
during five years on  
trap rock.

A dozen machines of  
this type giving emi-  
nent satisfaction.

The cast steel con-  
struction throughout,  
spring supported pit-  
man, adjustment for  
changing product,  
mang. st. wearing  
parts, engine type fly-  
wheels, automatic  
lubrication, water-  
cooled main bearings

#### APPEAL TO THE ENGINEER

Leaders in the development of  
Large Crushers, Rolls, Screens,  
Elevators and Tube Mills.

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**Power & Mining Machinery Co.**

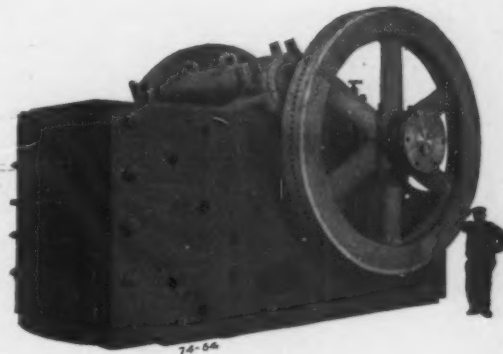
Works: CUDAHY, WIS.

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Built in the Size  
to Meet Your  
Requirement



Made in Sizes 36" x  
24" to 84" x 66"  
Receiving Openings

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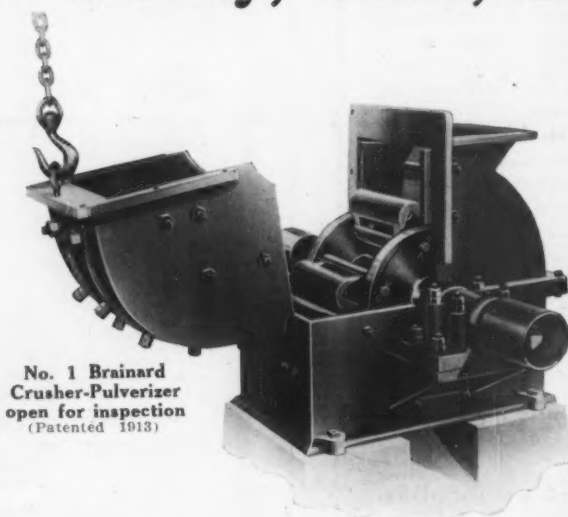
Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



## Four Reasons Why the Brainard Crusher-Pulverizer Saves Money, Time, Trouble

**1** Over 100% saving in maintenance guaranteed by using the BRAINARD CRUSHER PULVERIZER. We guarantee our HAMMERS to crush and pulverize four to six times more material than any other make of hammer. Are not only reversible but DOUBLY REVERSIBLE, meaning that where you get one wearing surface in other hammers, you get FOUR wearing surfaces in the Brainard. Made extra heavy of best grade Manganese Steel.

**2** Screen trouble always experienced with other makes of pulverizers, entirely eliminated by the Brainard method of supporting the screens. This means a great saving in maintenance.



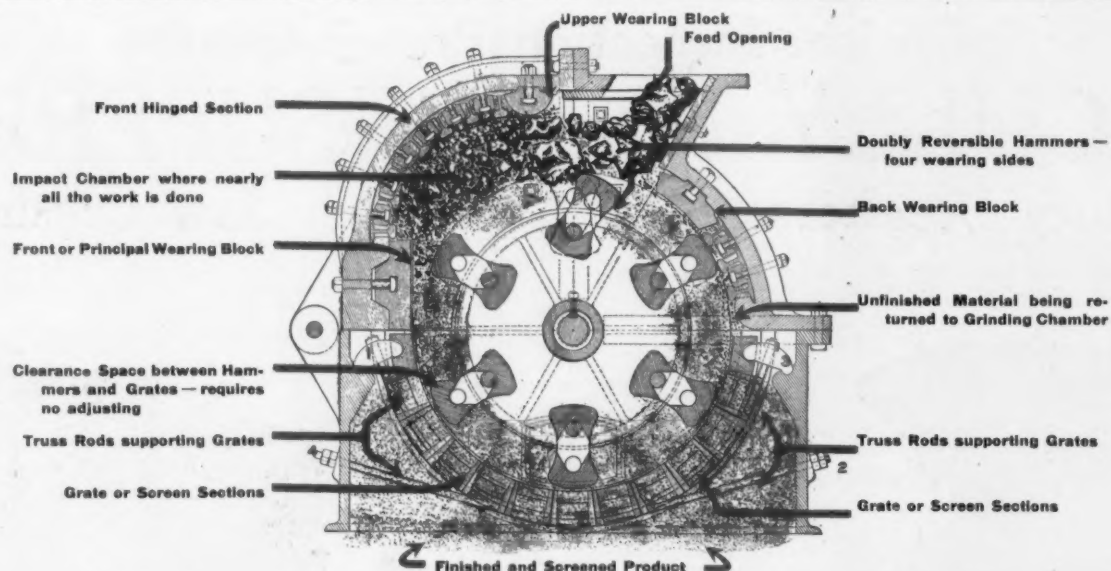
No. 1 Brainard  
Crusher-Pulverizer  
open for inspection  
(Patented 1913)

**3** The Brainard is a Crusher as well as Pulverizer and makes a Minimum or Maximum amount of Fines, according to the requirements. Requires 25% less power to operate than any other machine of the same capacity.

**4** The Brainard requires no adjustments in Crushing or Pulverizing, to maintain the size of the finished product, or the capacity. Cheaper and easier to make replacements when necessary, than any other machine. Designed so that every working part is easily accessible.

### The BRAINARD CRUSHER-PULVERIZER Is Built in Four Sizes:

SIZE	CAPACITY, TONS PER HOUR	SIZE FEED	R. P. M.	H. P. REQUIRED	APPROX. WEIGHT
0	2 to 4	4" x 4"	1400	6 to 8	1600
1	3 to 6	4" x 8"	1200	10 to 12	2600
2	8 to 12	6" x 16"	1000	20 to 22	5400
3	18 to 24	10" x 20"	800	40 to 50	17000



The upper end of the Truss Rods numbered 1 extend to the ends numbered 2, outside of the machine, where they are tightened or loosened. The upper ends of the Truss Rods numbered 3 extend to the ends numbered 4, outside of the machine, where they are tightened or loosened.

All Grates, Hammers and Wearing Blocks Are Made of the Very Best Quality of Manganese Steel.

## Midland Crusher-Pulverizer Co.

Offices: Old Colony Bldg., CHICAGO

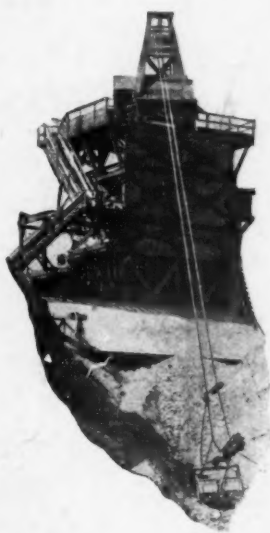
Factory: MILWAUKEE, WISCONSIN

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S. & M. Excavators Delivering Material Direct to Rotary Screening Plants.

## You Cannot Make a Mistake in the Shearer & Mayer Outfit

(Statement made by customer using two of our machines)

- ☐ For excavating and conveying sand, gravel, clay and overburden.
- ☐ Delivers direct to screens, cars, wagons, field conveyors or storage piles.
- ☐ Under positive control of one operator it digs, conveys, elevates and automatically dumps the material in one continuous forward operation from digging point to point of discharge.
- ☐ It is adaptable to any design of screening and washing plant.
- ☐ Our knowledge of how best to handle a sand and gravel problem gained through years of experience is at your disposal.
- ☐ Consult us before deciding on your sand and gravel plant.

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See our exhibit booths 179-180-181 Chicago Cement Show

### SAUERMAN BROTHERS

1140 Monadnock Block, Chicago, Ill.

Mfrs. of Cableway Excavators, Power Scrapers and Cableway Accessories



S. & M. Excavator Delivering Gravel to Crusher and Elevator Belt.



S. & M. Excavator Delivering to Gravity Screening Plant.

## LOAD BORE HOLES With Low-Freezing



## Quarry Powder

A New, Powerful, Quick-Acting Explosive Especially Made for Winter Work

**T**HIS explosive meets the requirements for an "all-round" powder for quarry work. It has the low-freezing property which makes the thawing of explosives seldom necessary, even in a near zero weather.

Insist that all blasting be done with DU PONT QUARRY POWDER or low-freezing explosives introduced and made by the pioneer powder makers of America.

ASK FOR NEW AND INSTRUCTIVE BOOKLET ABOUT EXPLOSIVES AND METHODS OF USING

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Operating expense does not depend upon the first cost of the equipment used, but it is the result of using equipment that will do the greatest amount of work in proportion to its cost.



is economical because of its unusual durability. If you are not familiar with the results to be obtained from Hercules Wire Rope, why not give it a trial? Many others have done so, and are now using it to their profit.

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Another important factor in Wire Rope economy is the correct selection of rope construction. We have a large Engineering Department which has made careful study of various working conditions, and we will gladly help you solve your engineering problems.

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**A. Leschen & Sons**  
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U. S. G. Co.'s Plant, Oakfield, N. Y. Shown as a Type of U. S. G. Mill Construction.

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At every important gypsum producing section of the country is located a U. S. G. Mill. These are the largest and most modern plants in the world devoted to the manufacture of gypsum products. By reason of our superior facilities we are able to give the retail dealer **SERVICE** and **MATERIALS** not elsewhere available in the industry. There's a logical reason for the quality of U. S. G. Plasters and their tremendous sales—it's the organization behind the goods.

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Equivalent of  
**1 to 3 tons**  
**"Dead Weight"**  
lifted off every truck by  
**GOODRICH**  
**"P.B."**

(Permanent Band Type)  
**WIRELESS  
TRUCK TIRES**

Goodrich "P. B." (Permanent Band Type) Truck Tires *reduce* the weight below springs from 100 to 300 pounds per truck—because all accessory metal tire fastenings, such as bolts, flanges, rims, etc., are eliminated.

Multiplying by 20, this (*in lessened wear and tear upon the mechanism*) is equal to a reduction in "dead weight" above the springs of from 2,000 to 6,000 pounds—or 1 to 3 tons per truck.

More miles and speed from the same amount of power, lessened depreciation and fewer repairs, sum up the results.



**Engineers say:** A reduction of **one pound** in weight of tires (or any part of a truck below the springs) is equal in **reduced strain** upon the mechanism to a **reduction of 20 pounds** in weight above the springs. (Consult any engineer.)

### A stronger, lighter, better protected tire

The elimination of accessory metal parts permits of a *heavier, stronger* base in Goodrich "P. B." Tires, which strengthens the whole tire and wheel—yet lessens the total weight per wheel.

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Write for folder giving full details. The Goodrich "P. B." Tire has no peers.

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